

**Capturing Believers:
American International Radio, Religion, and Reception, 1931-1970**

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by

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SUMMARY

“Capturing Believers” provides a history of the reception of American conservative evangelical missionary broadcasting from its inception in 1931 through the rise of the commercial era in 1970. The dissertation narrates accounts of two major Protestant stations, HCJB and ELWA, located in Ecuador and Liberia, respectively, as well as the U.S.-based project to build a custom transistor radio for the mission field. Employing a case-study approach, the thesis demonstrates the innovativeness of religious broadcasters who formulated a range of pragmatic responses to the drastic shortage of receiving sets in the southern hemisphere, including the use of social convention and the development of pretuned receiver technology. Missionary stations imported not only radios, but a constellation of American values into host countries through their reception activities. Overall, officials employed creative methods to construct a particular type of listener experience known as radio capture, characterized by regular listening in a domestic setting. By penetrating into the home or village and exposing listeners to proprietary broadcasts on a continual, even daily, basis, missionary receiver programs legitimized American conservative evangelicalism abroad and sowed seeds for a widespread revival of Protestantism in Latin America and Africa after 1970.

Chapter 1

International Radio, Conservative Evangelical Religion, and Global Modernity

Prologue

The Case for International Religious Broadcasting

International religious broadcasting comprises an important and under-appreciated chapter in the history of international radio and religion. Following dramatic advances in shortwave technology, which dramatically reduced the cost of long-distance communication, governments during the 1920s organized overseas broadcasting efforts.¹ The Soviet Union inaugurated international broadcasting in 1927 to commemorate the tenth anniversary of the Russian Revolution. Major Western European powers followed suit; Holland (1927), Germany (1929), France (1931), and the United Kingdom (1932) instituted radio services to communicate with colonial subjects abroad.² On the eve of WWII, the United States alone among the industrialized nations did not possess an official international broadcast presence. Only the outbreak of hostilities and the need to communicate American war aims to a European public led to the creation of the Office of War Information, later renamed the Voice of America.³

Catholic and Protestant organizations also seized upon the opportunities afforded by international shortwave broadcasting to promote their messages around the world. In February 1931, Guglielmo Marconi organized Radio Vatican in Rome on behalf of the Holy See in order to propagate papal doctrine to the Catholic faithful. In December of the same year, conservative American evangelicals launched the first overseas Protestant

radio outlet, Station HCJB, broadcasting on 250-watt transmitter from a converted sheepshed in Quito, Ecuador.

During the immediate postwar period, the configuration of private international broadcasting changed considerably. Commercial American chains such as the National Broadcasting Company (NBC) and Columbia Broadcasting Company (CBS) had established experimental networks in Latin America before WWII to promote the sale of American radio equipment and commercial products.⁴ In 1947, NBC and CBS made the historic decision to withdraw permanently from the field of international radio due to its unprofitability. Over the ensuing decade, an expansion of privately-owned conservative religious stations overseas, based in the United States, effectively replaced the commercial networks who had withdrawn from transnational broadcasting. Between 1945 and 1960, the number of American Protestant missionary radio stations worldwide increased ten-fold from two to twenty. By the late 1950s, radio preacher Walter Maier's *The Lutheran Hour* (a popular American religious program) could already be heard in 57 languages on 1,215 stations in 67 countries around the world.⁵ Over the ensuing three decades, international religious broadcasters (IRBs) expanded their global operations considerably, mirroring the rapid growth of reception facilities in developing countries which accompanied decolonization and followed the diffusion of the transistor radio. By 1980, conservative Protestant American stations around the globe dwarfed all other religious broadcasters in the world, vying effectively for listeners with much larger state-subsidized official broadcast voices. Political propaganda and Christian evangelism dominated the international airwaves during the 1970s and evangelical missionaries competed "on equal terms with the world's major political voices."⁶

Numbers give a sense of the scale and significance of the evangelical missionary radio enterprise in place by 1980. As illustrated in Table 1, the three major IRBs – HCJB, Far East Broadcasting Company (FEBC)(1948), and Trans World Radio (TWR)(1954) – competed effectively with the three dominant official broadcasters during the 1980s.

Table 1:
Comparison of IRBs and Official International Broadcasters, ca. 1980

	Number of Languages	Hours per Month	Letters per Year
FEBC^a	106	9,000	600,000
TWR	80	4,000	500,000
HCJB	14	2,130	120,000
VOA	42	9,644	400,000
Radio Moscow	82	8,916	---
BBC	37	2,932	452,000

^aIncludes data for Far East Broadcasting Association (UK) (FEBA), an organization loosely affiliated with FEBC
Source: Robert Fortner, “Saving the World? American Evangelicals and Transnational Broadcasting,” in Q. Schultze, ed., *American Evangelicals and the Mass Media* (W.B. Eerdmans, 1990).

Together with their smaller sister organizations, the major IRBs transmitted more hours and in more languages and received more letters annually than any other transnational broadcasters, including state-run services, despite considerably smaller resources.⁷

Nor has this position of broadcasting dominance abated since 1980. In 2003, TWR alone employed 13 super-power transmitter sites overseas, broadcasting 1,800 hours of gospel programs a week in 180 languages, more language services than the BBC, Voice of America (VOA), China Radio International, and Voice of Russia combined.⁸ TWR currently receives 1.5 million letters a year from listeners in over 160 countries.⁹ In 2005, FEBC and its affiliated local stations broadcast a total of 4,087 hours of programming a week in 161 languages over 147 outlets in 89 cities and 14 countries around the world.¹⁰

Statistics alone, of course, do not convey the cultural importance of international religious broadcasting or fully measure its intellectual significance. For scholars, missionary broadcasting merits detailed analysis for several reasons. Historically, the combination of private ownership, religious propaganda, and transnational broadcasting has proved a formidable and almost entirely American phenomenon in the history of international radio. American IRBs comprise the largest group of private broadcasters and of transnational religious broadcasters in the world today, far outstripping commercial stations and government-sponsored religion on overseas airwaves. Sociologist Jeffrey Hadden, a world authority on American televangelism, ranks IRBs as the “single largest component of transnational broadcasting.”¹¹ Robert Fortner, a leading expert on international religious broadcasting, considers IRBs the “largest single international radio users.”¹² Thus, understanding IRBs provides a crucial, if often overlooked, piece of the overall international broadcasting puzzle. The combination of private ownership, religious purpose, and significant success make IRBs a case of American “exceptionalism” in the history of international broadcasting that requires careful academic explanation.

Study of IRBs contributes not only to understanding of international broadcasting, but sheds light on the identity of conservative American religious groups and their complex relationship to the modern world during the twentieth century. Through their use of communication media, conservative Protestant groups have responded pro-actively to changes in contemporary society and spread their message in a new global environment. An analysis of institutional radio broadcasting practice in the mission field illuminates the progressive dynamic and evangelistic impulse, which lies paradoxically at the heart of

modern conservative American Protestantism alongside its more publicized “fundamentalist” face.

The dissertation employs two largely synonymous terms to describe international religious broadcasting. “International religious broadcasting,” a term favored by social scientists, including sociologists, media studies scholars, and students of international broadcasting, contains a contemporary time-frame. As a comparative term, IRBs are often contrasted with other transnational broadcasters (principally official government services, such as the VOA and BBC). The term “missionary radio,” adopted by historians, includes an historical dimension, linked to a specific phenomenon – the modern Protestant missionary movement, which began in the late eighteenth century. The term connotes the specific religious meaning and purpose attached by conservative Protestant groups in the United States to the use of radio overseas. This dissertation defines “missionary radio” as stations owned and operated on a continual basis outside the continental United States by conservative Protestant groups for the primary purpose of disseminating the gospel message in the vernacular language to foreign audiences.

Missionary broadcasters valued radio for several reasons. Clarence Jones, the founder of Station HCJB and principal architect of missionary radio, articulated four basic rationales for the use of radio by conservative American evangelical groups in the mission field. First, radio provided “vast coverage for the masses,” allowing missionaries to reach the “ends of the earth” with the gospel “more completely and consistently” than in any preceding generation. Second, radio circulated the gospel “quickly and continuously” to its listeners around the globe via electromagnetic communication, expediting the conservative Protestant church’s urgent task of world-evangelism. Third,

radio “penetrated” innumerable political, cultural, economic, and linguistic barriers to the propagation of the gospel, reaching domains traditionally inaccessible to the missionary, or what Jones called the “regions beyond.” Radio passed through walls to meet listeners in the “quiet” of their own homes, where “undisturbed by outward taboos and prohibitions,” they could hear the message of salvation and “be wooed by the Spirit of God.” Fourth and finally, Jones argued that radio allowed for a constant, often daily, repetition of the gospel message, which he felt would prove particularly valuable in frontier outposts that only received rare visits from missionaries. By repeating the gospel message, radio provided clarification, instruction, and encouragement, gradually breaking open the listener’s stony heart, in Jones’s terms, like continual drops of water until the truth finally shone in.¹³ Taken together – coverage, speed and urgency, penetration, and repetition - radio provided for conservative evangelical proponents in missionary circles such as Jones the most efficient and effective tool for world evangelism in the twentieth century.

Overview of Dissertation

Missionary broadcasting involved three basic operations: programming, transmission, and reception. This dissertation undertakes a study of conservative evangelical radio reception in the mission field. As a history of reception, it presumes the prior establishment of missionary radio stations (including transmitters) and program production, particularly in vernacular languages. Receivers provided an indispensable *sine qua non* for the missionary radio project. Radio could reach “untold thousands” of foreign nationals in their homes, as Jones boasted, only if they possessed the means of

reception. Yet when American evangelical broadcasters such as Jones arrived in the field in 1931, they found an appalling contrast to American radio markets – namely, a near complete dearth of receivers. Unlike the United States, where gospel radio flourished, the “receiver problem” (shortage of receivers) in the mission field required missionaries to provide radios as well as programs. Building radio audiences in the mission field thus included a material as well as a cultural component.

By reception, the dissertation intends both technology and technique. Properly “receiving” the gospel for radio missionaries entailed not merely possession of a radio set, but actively using the radio at the proper times to tune in the correct programs on a continual basis in order eventually to produce religious conversion. The dissertation examines the manner in which missionary broadcasters established listeners for their stations’ programs by both distributing radios and regulating their use. The study is not intended as a cultural chronicle of American international broadcasting, a social account of listeners, or as a history of American religion, *per se*. Rather, as a technical and institutional study of conservative American religious broadcasters in the field of reception, it links technology and culture, exploring in depth the precise material means through which American Protestant influence diffused overseas and the often subtle cultural implications of material practice for the overall missionary radio enterprise.

As its subject matter, the dissertation undertakes case studies of leading receiver programs at two missionary stations, HCJB and ELWA, located in Ecuador and Liberia, respectively, between 1931 and 1970. As the “Pioneer Missionary Broadcaster” established in 1931, HCJB set the pattern after 1945 for all future missionary radio stations. Under the leadership of Clarence Jones, its inaugural Radio Circle department

blazed the path of providing radios to the lower classes and rural poor. Station ELWA, constructed in 1954 in Monrovia, Liberia, capped a decade and a half of missionary radio expansion. The only full-time religious station on the African continent by the mid-1950s, ELWA officials undertook a vigorous and innovative expansion of its receiver program, working closely with missionary engineers in Chicago to develop the world's first transistorized portable missionary receiver. A third case study of the postwar evangelical project to design and build a custom missionary transistor receiver demonstrates how missionary engineers based in the United States adapted new technology in opportunistic and imaginative ways to meet significant demands in the field. Though overrun by anti-government rebels in the 1980s and burned to the ground, ELWA retained the richest archival records of the major IRBs.

As its primary methodology, the dissertation therefore employs an historical case-study approach, closely linking three separate analyses of Station HCJB, Station ELWA, and the missionary transistor receiver project. The study is the first attempt to provide a history of the reception of missionary radio using primary sources based in IRB archives. As a theoretically-informed work in the history of technology, the dissertation relies on empirical investigation of archival sources and chronological narrative as its basic method and organizing principle. The dissertation employs theory in two ways: as a general framework for conceiving of modernity and religious communication (discussed below) and as a heuristic to describe the relationship between missionary broadcasters and their audiences. With respect to the latter, the dissertation interprets the history of missionary radio through the organizing rubric of “capture” – a novel concept which requires brief explanation.

During the period 1931 to 1970, missionary broadcasters conceived of reception primarily in terms of radio capture. As discussed in this dissertation, “radio capture” involved broadcaster control of mundane set operations in order to produce regular program attendance. It included a series of social conventions, legal enforcements, and technical designs (discussed in various chapters) designed to ensure that listeners stayed tuned to missionary stations on a frequent basis over an extended period of time. As will be explained later in the dissertation, missionary stations valued repeated exposure to their shows (particularly the presentation of the gospel) because they believed it significantly augmented the likelihood of audience conversion. As opposed to trying to retain audiences through attractive programming, missionary broadcasters attempted to keep listeners through material means – i.e., through control over the physical operation of the set itself (when it was turned on/off, what stations listeners tuned in, how often they changed batteries, etc.). Radio capture thus represented both a means and an end. As a major tool of missionary evangelism, the process entailed a set of practical listening habits. At the same time, capture produced a lifestyle. It involved broadcasters in a series of active, ongoing relations with foreign nationals centered on technological devices. “Captive audiences” in turn displayed a certain disposition, a state of disciplined attentiveness, which had been inculcated by missionary producers and which resembled religious devotion closely.

The account given here begins in 1931, the date in which the first missionary radio station began operations, and ends in 1970, a major turning point in missionary radio history when broadcasters closed down their proprietary receiver programs. The roots of the missionary radio project lay in the use of radio as a form of evangelistic

outreach among conservative evangelical groups in the American Midwest during the “radio boom” of the late 1920s. In keeping with evangelical missionary practice, missionary broadcasters overseas targeted the poor as their primary audience, particularly in remote rural areas not serviced by retail markets. The lack of proper receivers among the poorer classes - largely a by-product of the expensive consumption of batteries by vacuum-tube sets - formed the major challenge faced by religious American broadcasters in the mission field during the middle decades of the twentieth century. Missionary broadcasters at HCJB and ELWA responded in innovative ways to this “receiver problem” during three distinct periods: 1931 to 1945, 1945 to 1960, and 1960 to 1970. In narrating the history of missionary radio receiver programs, the dissertation weaves together three distinct narrative strands - producer control (epitomized by pretuning), advances in technology (particularly transistors), and commercialization of radio operations (adoption of monetary exchange and later market distribution) – noting how managers at two missionary radio stations joined these strands in various configurations and with variable results in order to increase their effectiveness with listeners. During their initial operations, broadcasters at HCJB and ELWA relied primarily on social and institutional arrangements to maximize the usage of scarce vacuum-tube radios, which they imported into Ecuador and Liberia. As their programs matured during the postwar period, however, missionaries embraced technology and commercialism as solutions for their receiver problems, first assembling their own radios, then custom designing and producing a custom transistor receiver, and finally purchasing commercially produced pretuned transistor radios for distribution in the mission field.

Theoretical Framework and Historiographic Context

The dissertation is intended primarily as a work in the cultural history of technology within the broader field of science and technology studies (STS).ⁱ Within STS, the dissertation situates itself within a growing body of work in history of technology and in social theory that views modernity (and contemporary postmodernity) as the product of advances in communication and transportation technologies and constructs an alternative paradigm of modernity based on an ideology of circulation rather than production.¹⁴

Taking their cue from Marx's labor theory of value, historians and sociologists of technology have frequently depicted the production process and manufacturing systems (the American system, the Fordist system), along with the related experiences of work and consumption, as the central trope of modernity. In this model, dating back to the Industrial Revolution, human labor, aided by machinery, controls and transforms natural energy flows into work, producing surplus value or wealth; use of machine technology marks Western industrial society's decisive break with the pre-modern past.

This dissertation attempts to formulate a supplementary construction of modernity around "connective systems" and structures, designed to facilitate the circulation of goods, ideas, and people within and across a range of borders and boundaries.¹⁵ Drawing on the burgeoning body of literature into the roots of the postindustrial social and technical order, it implicitly ties the rise of modern industrial society in the West to the expanded flow of materials, populations, and information via increasingly sophisticated social networks and "distantiating" circuits of exchange, beginning in Europe at the close of the Ancien Regime

ⁱ STS contains various approaches to the study of science and technology, including history, sociology, and anthropology.

and expanding in scope, pace, and scale over the succeeding century and a half to encompass the globe.¹⁶ “Distantiating” communication and transportation technologies and information systems have extended control over nature through the re-ordering of time, space, and data. By significantly increasing the volume and flow (“throughput”) of goods and by dramatically extending the geographic scope of exchange, connective technologies and systems have produced significant “time-space compression” and created an historically unprecedented level of cultural change.¹⁷

The history of missionary radio cannot be told as a purely cultural narrative separate from its material underpinnings. The conception of modernity as a circuit of expanding networks, including both semiotic and structural components, provides a framework for a more nuanced understanding of missionary radio activity. Missionary broadcasting entailed the simultaneous, coordinated communication of ideology and practices on a global scale. Circulation of religious ideas and significations created points of shared, communal interaction between American broadcasters and their foreign audiences through the circulation of artifacts (receivers).

Communication in the mission field involved more than the mere transmission of objective information, but included a heavily social process of interaction imbued with deliberate symbolic meaning.¹⁸ Receivers formed a principal rubric around which the missionary relationship crystallized. Addressing the shortage of proper receivers in developing countries formed a core activity for American evangelical missionaries, which both reflected and directly shaped their attitudes to listening audiences. Radio sets, in turn, made broadcasting reception feasible for certain groups of listeners in the mission field, while delimiting specific types of audience experience. Thus, as key works in the

phenomenology of media have pointed out, scrutinizing the means of missionary communication provides as important a tool of interpretation as textual analysis. The significance of radio missionary work lay not only (or even primarily) in missionaries' explicit religious message, but in the technical opportunities and implicit cultural possibilities conveyed through reception activity.

Historiography

The dissertation brings together major bodies of literature within STS and related fields in three primary areas: radio and broadcasting, user studies, and globalization.

The current study of missionary radio stands to make contributions to the history of radio broadcasting in three primary areas, relating to international radio, religion, and reception, respectively. First, the dissertation will add substantially to our understanding of the study of international radio. Due to the small size of their resources compared with government broadcasters and the religious content of their programming, IRBs have largely “fallen through the cracks” of academic inquiry. Scholars have yet to narrate the historical origins and development of IRBs, much less account for their unique and exceptional success in international broadcasting. Dominant accounts of international broadcast history have been written within the framework of the nation-state and favor treatment of large government services in the United States and Europe, such as the VOA and BBC. Diplomatic historians and political scientists, such as Julian Hale, Philo Wasburn, Michael Nelson and Walter Hixson, have focused their attention almost exclusively on official broadcasters and the political function of propaganda.¹⁹ Daniel Headrick and Peter Hugill have similarly addressed the political implications of global

telecommunications.²⁰ Emphasis on the origins and Cold War activities of the VOA has drawn considerable attention from scholars.²¹ The activities of other groups, such as amateur operators, commercial firms, and cultural stations, who made important international contributions, while the subject of significant studies by James Schwoch and Fred Fejes, have received considerably less academic scrutiny.²²

An in-depth, archivally-based history of American international religious broadcasting remains to be written. Although numerous popular accounts have been written by missionary broadcasters, IRBs have undertaken no serious, critical study of their organizations using their own resources.²³ Since the holdings of missionary broadcasters have only recently been made available to the public, the small quantity of current historical scholarship on American international religious broadcasting institutions makes little use of archival research. Standard histories of international broadcasting written by Walter Emery, Donald Browne, and James Wood make comparatively little reference to IRBs, since audiences for IRBs are considerably smaller than state services, and use few primary sources.²⁴ The contemporary accounts of Jeffrey Hadden and Robert Fortner, world authorities on televangelism and IRBs, respectively, lack a systematic framework or historical perspective and rely exclusively on secondary sources.

Second, a study of missionary radio will add not only to our understanding of international radio, but our understanding of religious radio as well. To date, the histories of technology and religion have remained largely distinct fields. With the exception of the path-breaking scholarship of Lynn White and the recent work of David Noble, historians of technology more generally have done little work overall at the intersection

of religion and technology.²⁵ Following the rise of televangelism and the Moral Majority in the 1970s, scholars from a variety of other disciplines explored various social, economic, and political dimensions of the “electronic church,” frequently criticizing the right-wing agenda implicit in conservative religious media.²⁶ Employing an anthropological approach, media sociologists Stewart Hoover, Daniel Stout, and Judith Buddenbaum emphasized the central role that religious television in the United States played for conservative religious groups by providing a symbolic, community-based response to the secularism and anomie of modern life.²⁷ Though insightful, the burgeoning literature on televangelism has yet to trace the historical roots of the electronic church or its antecedent, religious radio; nor has it explored the implications of American religious programming overseas.

Finally, a study of missionary radio will add to our understanding of radio reception. Dominant accounts in the history of American broadcasting by scholars such as Hugh Aitken, Susan Douglas, Susan Smulyan, Robert McChesney, and Thomas Streeter have focused their attention on the social and technological construction of the major components of the American broadcasting system, including commercialism, network organization, and public regulation.²⁸ In comparison, with several notable exceptions, scholars have paid far less attention to the history of broadcast reception. Aitken and Sungkook Hong have provided important accounts of the development of the practice of “syntony,” or tuning, during the pioneer era of wireless.²⁹ Yet, scholars have conducted little research into the adoption of receivers in the United States, despite “the considerable interest in radio’s early history.”³⁰ Louis Carlat’s telling account of how radio manufacturers domesticated the radio receiver in the American home by 1930

through a re-gendering of its operation stands almost alone during the period.³¹ Susan Douglas's bold "anthropology of listening," which narrates shifts in radio listener experience over almost a century, does not attempt to account for changes in the material basis of reception.³² Michael Brian Schiffer's definitive accounts of the portable radio from its earliest days through the transistor era, demonstrate how receiver technology developed alongside broader cultural changes in American consumer society, but have proven the exception in American radio history. Schiffer's work provides a valuable point of reference on which this dissertation will draw directly in delineating the development of the portable radio in the mission field.³³ No single major scholarly account of the American development of the transistor radio and its global diffusion exists yet in print.

The study of radio reception overseas has received even less attention than of listening in the United States. As economic historian David Clayton has recently argued, we know surprisingly little about the diffusion and consumption of radio receiver technology outside the West.³⁴ Unlike transmission facilities, governments in developing countries made little effort historically to ensure reception capabilities, leaving such activity to the private sector.³⁵ Standard works on international radio have largely mirrored this government bias, concentrating almost exclusively on the construction of transmitter systems overseas rather than receiver facilities, which have proved far more diffuse and difficult to track.³⁶ Contemporary audience research analysis undertaken by industry experts such as Graham Mytton (BBC), while informative, lacks a formally academic or historical framework.³⁷

Scholars who study radio in the United States have paid remarkably little attention to radio's historical development outside the industrial West, mirroring a larger trend in the history of technology more generally.³⁸ No major scholarly treatment has appeared in the United States within the past twenty-five years devoted to the history of broadcast production, transmission, and reception in the non-Western world.³⁹ Recent comparative media treatments address the broadcast systems of the major industrialized states of the United States and Western Europe.⁴⁰ Standard works on broadcasting in the developing world by Katz and Wendell and Sidney Head are not only dated, but make only passing mention of religious broadcasting, either domestic or foreign as well.⁴¹ Given the paucity of existing scholarship published in the West on the subject, this dissertation can deepen understanding of an important chapter in radio's African and Latin American history during the middle decades of the twentieth century by focusing on a small, but active and influential sector of the broadcast economy.

The current examination of international religious broadcasting can also make worthwhile contributions to ongoing debates in the scholarly analysis of radio. Following the publication in 1997 of Michelle Hilmes's influential work, *Radio Voices*, a new field of radio studies emerged, joining scholars from a range of backgrounds in media, cultural, and American studies, as well as contemporary industry practitioners.⁴² Following Hilmes' lead, scholars adopted a highly productive approach to the scrutiny of broadcasting, considering radio "not as a collection of wires, transmitters and electrons but as a social practice grounded in culture, rather than in electricity" and focusing on broadcasters outside the dominant mainstream.⁴³

The dissertation can contribute to recent scholarship in radio studies in three areas. First, by considering reception primarily as a material process, this history of missionary broadcasting demonstrates how radio reception involves technical operation as well as cultural production, balancing the current focus on symbolic activity in the field. Second, despite the growth of the field of radio studies, Kate Lacey has noted that the vast majority of work continues to be conducted within various Western, national contexts, echoing radio's history as a national institution.⁴⁴ By addressing missionary activity in an international setting, the current work can help to redress the relative neglect of radio's comparative or transnational arena. Finally, with the notable exception of the work of Tona Hangen, radio studies have yet to encompass the topic of religion within their cultural turn.⁴⁵ The dissertation is intended indirectly as a sequel to Tona Hangen's pioneering examination of the early years of conservative evangelical radio broadcasting in the United States, extending her analysis into the cross-cultural, missionary arena.

User Studies

A perspective of technological users is adapted to analyze the history of religious radio. A users' perspective highlights reception as a material process and stresses the creativity of missionary broadcasters and their audiences as agents of technological change.

The study of users represents an increasingly fruitful vein in STS. In his history of the American telephone, sociologist Claude Fischer constructs a "user heuristic" to show how purposeful users employ major technologies in multiple ways, developing new

applications for existing devices and deciding which uses will predominate.⁴⁶ Fischer and Michelle Martin document how residential female subscribers developed a new application for the telephone, sociability, not anticipated by telephone companies. Fischer's user approach closely resembles Ruth Schwartz Cowan's model of the "consumption junction."⁴⁷ Since consumption represents merely one form of use, however, user analysis has broader application in non-market environments such as the radio mission field prior to 1970, the period covered in this dissertation. In his study of the American countryside between the wars, Ron Kline depicts farm men and women as active agents of technological change who adapted the "stable" technologies of the telephone, automobile, and radio to create their own versions of rural modernities.⁴⁸ Trevor Pinch and Nelly Ourdshoorn's recent anthology, *How Users Matter*, assembles scholarly research on users from a variety of fields, demonstrating the "co-construction" of users and technologies in several case studies. Similarly, in his media ethnography of a contemporary Argentinean on-line community, Pablo Boczkowski has shown how users and technologies exert mutually shaping influences on each other.⁴⁹

Radio users have drawn significant attention from scholars. Much of the scholarship treats radio listeners in America as active agents with the ability to implement cultural change. Kline has studied how farmers wove radios into their daily lives predominantly by selecting "hillbilly music" and "tuning out the city and tuning in the country."⁵⁰ Lizbeth Cohen, in her study of Chicago workers during the new deal, notes a similar cultural appropriation of radio, showing how labor unions utilized local radio to reinforce ethnic community and resist the modernizing influences of consumer technologies, such as chain stores and mass media.⁵¹ A rich literature has developed on

amateur hobbyists as technical operators.⁵² Susan Douglas's path-breaking contributions brought to light the fundamental role played by radio hams in the social construction of broadcasting as the dominant paradigm of American radio during the opening decades of the twentieth century. Discussing amateurs during a later period, Kristen Haring analyzed how ham operators negotiated important gender differences in the postwar American home. Yuzo Takahashi has documented the significant technical contribution of "tinkerers" to the emergence of a Japanese postwar consumer electronics industry.

Critics have pointed out weaknesses of the current STS approach to users. Svante Lindqvist has argued that the history of technology as a whole has displayed a distinctive preoccupation with invention, innovation, and the early stages of technological development and generally ignored the vast quantity of technological infrastructure already in existence.⁵³ Building on Lindqvist's work, David Edgerton points out the "innovation bias" in user studies, which has resulted in skewed conceptions of gender, race, and social class and a basic misconception of technological change. STS user studies, moreover, have demonstrated a distinct predilection for organized and relatively articulate groups of users in advanced (Western) industrial economies.⁵⁴

The dissertation employs a user heuristic to interpret the mechanics and ethos of missionary broadcasting. Building on the scholarly literature on radio amateurs, the dissertation considers radio missionaries as a cohesive, well-organized, and innovative group of technical users. User communities possess important collective resources, such as publications and institutions, which allow them to further develop a common technical culture (containing specialized knowledge and a shared technical identity). Amateur operators in the United States illustrate this pattern; they enjoyed local clubs and

newsletters, as well as a national organizational structure (the Amateur Radio Relay League). Missionary broadcasters possessed similar institutional assets by the early postwar period, including publications, regular meetings, technical training institutes, and amateur service agencies. By 1954, radio engineers based in the Chicago area formed a nation-wide research committee to produce a custom transistor receiver for use in the mission field, connecting missionary officials and executives in major consumer electronics firms. Broadcasters deployed off-the-shelf technology, importing, designing, assembling, and distributing radio equipment to fit their unique cultural agenda.

Fundamentalist broadcasters in the mission field acted as pragmatic entrepreneurs and imaginative system-builders.⁵⁵ Constructing operational radio systems from scratch in resource-poor tropical environments required considerable vision, ingenuity, and persistent hard work, particularly during the height of the Great Depression in the United States. To support their ministries, missionary broadcasters assembled an impressive network of audiences, ranging from rank-and-file churchgoers, major religious program producers, and radio manufacturers in the United States to local governments, station personnel, and listeners. Constructing platforms for radio reception in the mission field involved far more than simply handing out radios. Instead, to mobilize financial, institutional, and logistical support for their ministries, missionary broadcasters formed numerous networks of communication, tying together disparate groups of actors from across the globe in “distantiated” forms of electronically mediated communities.

The dissertation demonstrates how users and technology (radio receivers) mutually shaped each other in the mission field. While stressing broadcasters’ agency as users, the dissertation demonstrates empirically how missionaries’ freedom of action was

constrained by receivers and listeners. Unlike advanced industrial markets, the shortage of both radios and radio components in developing countries, as well as the related problems of maintenance and repair, posed enormous hurdles for missionary stations prior to the communication revolution of the late twentieth century. As the present study will show, reception difficulties heavily shaped the overall missionary broadcasting effort.

Global studies

The current study of missionary radio combines the study of religion and communication technology on a global scale. Sociological observers of globalization have been among those most closely attuned to the emergence of worldwide religious broadcasting. Manuel Castells has suggested an intrinsic, structural relationship between the appearance of a global network society and the resurgence of fundamentalist religious identity around the world.⁵⁶ Anthony Giddens views religious fundamentalism as the offspring of globalization, which it “both responds to and utilizes” and which Giddens traces largely to developments in systems of communication beginning in the 1960s.⁵⁷ Sociologists James Davidson Hunter and Joshua Yates in an important recent study included IRBs as part of the “vanguard of globalization.”⁵⁸ Sociologist Jeffrey Hadden projects that IRBs will remain an important global presence into the twenty-first century.⁵⁹ Social scientists from a range of fields, including international relations and political science have recently begun to recognize the relevance of transnational religious formations for the emergence of a new global order in the post Cold War era.⁶⁰ Sociologists of religion and media studies scholars, joining together in a new field of media and religious studies, have examined the ways in which media increasingly shaped

the religious landscape of contemporary society on an increasingly global scale. The dissertation contributes to the growing interest in the sociological study of global media and religion by tracing the joint historical flows of religious ideas and artifacts across national boundaries in a globalized environment.

Scholars have defined globalization in various ways, including the growth of international commodity flows, the consolidation of transnational corporations, and the collapse of the nation-state.⁶¹ Emphasizing its continuity rather than its disjuncture with the past, this dissertation considers globalization as part of the history of work communication, an analytical framework developed by the French professor of information and communication sciences Armand Mattelart.⁶² A Foucauldian frame of analysis linking ideology, power, and governance, Mattelart's conception of world communication ties modernity to the growth in circulation of goods, people, and information via increasingly sophisticated social networks and circuits of exchange, dating back to the at the end of the Ancien Regime in Europe. Drawing on Mattelart, the dissertation defines globalization primarily in terms of the emergence of a global "network society" made possible by advances in information and communication technologies which have extended world interaction and facilitated exchange to a new degree and on a novel scale.⁶³

Missionary broadcasters have acted historically as globalizing agents by connecting audiences in developing countries within their social, cultural, technical, and institutional world-wide networks. The modern missionary movement was one of the first organized movements in the West to conceive of the world as a unified global space for operation as early as the late eighteenth century when Baptist and missions pioneer

William Carey published his classic treatise, founded the first mission society of the modern era, and sailed for India.⁶⁴ As discussed below, the dissertation places its study of IRBs within the larger historical framework of the modern missionary movement because of the movement's global significance. By exporting modern Western technology and values to remote regions of the globe, radio in the missionary enterprise during the twentieth century has functioned as an "instrument of momentous change," accelerating the "larger confrontation among modernity, the Christian faith, and world cultures."⁶⁵ Beginning immediately after WWII and continuing into the new century, IRBs have targeted under-served markets ignored by larger state services and commercial stations, produced programs in hundreds of vernacular and tribal languages, and distributed thousands of radio receivers in inaccessible rural areas. Missionary broadcasters functioned indeed as a "vanguard of globalization" in numerous parts of the world during the second half of the twentieth century, bringing marginalized populations and isolated ethnic groups in developing countries into the mainstream global communications revolution. The dissertation provides an important prehistory of this larger historical process, tracing the complex inter-twinings of religion and communication technology on a world scale.

Actors

Defining Fundamentalism and Evangelicalism

The dissertation restricts its study of missionary broadcasters to conservative evangelical American Protestants and contextualizes the history of missionary radio within the modern Protestant missionary movement. Significant historiographic debates

and questions of interpretation surround the nature, relationship, and distinction between fundamentalism and evangelicalism, two dominant streams within conservative American Protestantism relevant to this dissertation.

Religious fundamentalism has generally been held up in a negative light by academics. Scholars of religion such as Bruce Lawrence and Gilles Kepel have depicted religious fundamentalism as a basic revolt against the modern world.⁶⁶ Nancy Ammerman has similarly characterized Protestant fundamentalists in terms of their opposition to the modern ideologies of liberalism, secularism, and communism, as well by their positive commitments to the doctrine of biblical inerrancy, premillennial dispensational theology, and organizational separatism.⁶⁷ George Marsden, the most prominent historian of American Protestant fundamentalism, has defined the movement as “militancy toward modernist ideology and cultural change.”⁶⁸

Fundamentalism represents a religious response to the condition of modernity. Protestant fundamentalism originated in the United States between 1880 and 1920 in opposition to a series of social, cultural, and intellectual changes of late nineteenth century America, including industrialization, urbanization, immigration, academic professionalization, secularization, and the introduction of German higher biblical criticism, which precipitated the breakup of a united evangelical tradition and the demise of a white conservative Protestant hegemony.⁶⁹ The confrontation between conservatives and liberal Protestants (who generally embraced these changes) tore denominations apart, resulting in one of the most important divisions in Protestantism since the sixteenth century. First used in 1920, the term “fundamentalist” derived originally from a series of pamphlets on core doctrines of the faith, *The Fundamentals*, published by conservative

apologists between 1910 and 1915; hence, the term originally functioned as a term of opprobrium to describe orthodox Protestant evangelicalism in America. By 1925, however, the tide had turned against conservative forces and the epithet became one of general derision, associated with insularity and backwardness. Following losses in divisive battles over control of major church denominations and the disaster of the Scopes Trial, fundamentalism largely disappeared from public life in America in the late 1920s, experiencing an underground renaissance during the ensuing two decades as the movement spawned a series of institutions, including bible institutes and schools, summer Bible conferences, radio stations, and mission agencies, which unified the faithful and kept the movement afloat.⁷⁰

Use of the generic term “fundamentalist” hid from the outset divisions within the movement of conservative Bible-believing Protestants. While extremists favored outright separation, moderate voices favored remaining within historic mainline denominations, implementing internal change and influencing the broader American culture through a more positive presentation of evangelicalism. In 1941, Carl McIntire formed a coalition of explicitly separatist fundamental, largely independent Baptist churches, known as the American Council of Christian Churches. The following year, moderates grouped together to form the National Association of Evangelicals, which grew rapidly by 1947 to include 30 denominations and 1,300,000 members and soon spawned its own publication (*Christianity Today*), seminary (Fuller Theological Seminary), and influential interests groups (National Religious Broadcasters and Evangelical Foreign Missionary Association). The leadership of the nascent reform movement which was rapidly assumed by a prominent young evangelist and favorite fundamentalist son named Billy Graham.

When Graham accepted the sponsorship of the local Protestant Council of Churches for his New York crusade in 1957, the rupture within conservative evangelicalism became complete. Hardliners labeled their former allies as “neo-evangelicals” – a play on the term “new evangelical” popularized by one of the movement’s founders.⁷¹ Leaders preferred the simple epithet “evangelical,” which has gained common usage since to describe both the splinter group and the wider historical movement of which it formed part.⁷² Despite their vocal criticism and stridency, separatist fundamental churches remained far fewer in number (numbering only four million members in 1970) and far more limited in cultural impact than their “neo-evangelical” counterparts.⁷³

As a conservative protest movement, fundamentalism in the United States thus formed part of a longer evangelical mainstream and historical continuum. “Evangelicalism” represents the most important strain and dominant Protestant expression in American Christianity and the “most influential social and religious movement in American history.”⁷⁴ Yet evangelicalism, D.G. Hart has aptly stated, is one the most difficult religions in the United States to understand.⁷⁵ Evangelicalism does not represent a formal church denomination. As a result, unlike denominations, evangelical membership cannot simply be adduced from church rolls. Scholars have heavily debated the precise definition of “evangelical,” arguing even that it contains too great a diversity of historical meanings to contain heuristic value.⁷⁶

Despite the methodological and interpretive difficulties, the historical importance of evangelicalism clearly warrants its continued usage as a category of analysis. Historian Mark Noll has succeeded in distinguishing evangelicalism from other religious traditions by its “principles convictions” and “genealogical connections.”⁷⁷ Beliefs have played a

disproportionate role in defining the character of evangelicalism compared with other American religious traditions.⁷⁸ British historian David Bebbington has identified four basic beliefs which distinguish evangelicalism: biblicism, crucicentrism, conversionism, and activism.⁷⁹ Evangelicals hold a high view of the Bible as the ultimate authority in matters of faith and living. They stress the necessity of Christ's death on the cross as the only atoning sacrifice for sin. They emphasize the need for spiritual rebirth, or conversion experience, requiring an acknowledgement of personal sinfulness and faith in Christ's substitutionary sacrifice. Salvation results in changed lives, expressed primarily through evangelism and active, spirit-filled or holy living.

American evangelicalism represents a long historical tradition in the United States. Evangelicalism emerged in the mid-eighteenth century as a transatlantic revival movement connecting the American colonies with its motherland, fueled by the activities of the English preacher George Whitfield, which sparked the colony-wide religious revival known as the Great Awakening (1735-1755). Ideally suited to the new American environment, evangelicalism spread like wildfire on the frontier and in the South via Methodist "circuit riders" and Baptist camp meetings. During the early decades of the nineteenth century, the continued revival of the Second Great Awakening joined people from numerous Protestant backgrounds and groupings in a transdenominational evangelical coalition with a twin focus on individual conversion and social reform. Despite the divisions of the Civil War, which tore church denominations in half, evangelicalism remained the dominant religious position in America through the end of the century, culminating in the subsequent split between liberals and conservatives, the

fundamentalist-modernist controversy, and the post-WWII emergence of a “new evangelical” movement.

In the American context, “evangelical” thus has two basic meanings. As a broad description of a movement made up of common historical experience and shared beliefs and practices, evangelicalism encompassed a swathe of conservative Protestants who collectively subscribed to belief in the Bible’s final authority, the need for conversion, and evangelism. Scholars have used various metaphors to describe the loose, disaggregated structure which knit together a wide array of churches across the Protestant spectrum, including a mosaic (Marsden), kaleidoscope (Timothy Smith), canopy (Eskridge), and patchwork quilt (Balmer). This includes a wide variety of conservative Protestants, such as fundamentalists, Pentecostals, Holiness, charismatics, African American, Lutheran, Baptist, Reformed, and Wesleyan churches. Secondly, “evangelical” has also functioned as a self-descriptive label for a slice of American Protestants who have self-consciously adopted the label as their specific denominational address and religious identity. Employed in this more limited sense, “evangelical” bears close resemblance to the reform movement founded after WWII under the leadership of Billy Graham.

Like “evangelical,” the category “conservative Protestant” employed in this dissertation describes a similarly broad collection of adherents. In addition to evangelical groups, conservative Protestants include a range of “confessional” believers in denominational churches who shared “traditional” interpretations of Christian doctrines, particularly faith in miracles, such as the virgin birth and the earthly return of Christ, in

opposition to liberal Protestants who favor naturalist explanations.ⁱⁱ Though they shared Biblical norms, an interest in broadcasting, and a commitment to spreading Christianity through missions, confessional Protestants have distinguished themselves from evangelicals by the higher confidence they place in church liturgy (creeds, confessions, and catechisms), sacraments, and polity (including church government) as opposed to rebirth experience and ecclesiastical autonomy.⁸⁰

Uses of the terms “fundamentalist” and “evangelical” carry with them major interpretive and methodological difficulties, which derive from the dual meanings of the words, the complex historical relationship of the two movements, and the particular significations the categories carry in the broadcasting field. Both appellations carry broad and narrow meanings, being used to describe historical movements as well as well as more or less distinct, self-consciously organized coalitions of “card-carrying” members. Further complicating matters, missionary broadcasters generally avoided use of these labels and refrained from any reference in their programs to divisive theological and ecclesiastical battles at home, since local audiences overseas found denominational distinctions a distasteful and distinctively Western preoccupation.

Following this distinction, the dissertation uses the terms fundamentalist and evangelical in two ways: as appropriate historic terms to reference self-conscious movements and as generic categories to describe general tendencies within conservative biblicist Protestantism. During the first half of the dissertation, which examines the origins and activities of Station HCJB from 1920 to 1950, the term “fundamentalist” is

ⁱⁱ Tradition, as used in this dissertation, consists of the attempt to derive hermeneutical meanings and social norms from fixed rules that are tied to an unchanging past and which are derived from a closed, supernaturalist reading of the Bible. (See Max Weber, “The Types of Legitimate Domination” in Craig Calhoun, ed., *Classical Sociological Theory* (Blackwell, 2002).

employed, because this is the term generally employed by the station's founders.

Missionary broadcasting grew out of the soil of American Protestant fundamentalism of the 1920s and early 1930s. In the second half of the dissertation, which analyzes the formation of Station ELWA by missionaries from Wheaton College after WWII, the term "conservative evangelical" is generally preferred to "fundamentalist," since by this time the latter term referred more narrowly to explicitly separatist fundamental churches.

Overall, the dissertation employs the term "conservative evangelical" to characterize the missionary radio enterprise. "Conservative evangelicals" includes those conservative Christians who placed a high priority on evangelism and missions, including preeminently missionary broadcasters.⁸¹ The term conveys the implicit tension between the conservative roots and evangelistic spirit behind missionary radio.⁸² As a broad category, "conservative evangelical" also distinguishes the broader evangelical consensus from the specific postwar American movement directly affiliated with Billy Graham, often referred to under the moniker "new evangelical." As an adjective, the dissertation also employs "evangelical" to reference the communication of the conservative Protestant version of the gospel, with its implicit notion that salvation comes through a simple response of faith to a hearing of the gospel message rather than through church membership or participation in sacraments.

By describing missionary radio as "conservative evangelical," the dissertation seeks to blur rigid lines delineating fundamentalism from evangelicalism. Evangelicalism represented the larger historical tradition out of which fundamentalism emerged in the United States during the first two decades of the twentieth century, as well as the larger worldview of which it formed part. Rather than as alternatives, the two categories should

be seen as part of the same continuum, as tendencies or poles within the same basic religious orientation. As David Stoll perceptively notes, evangelicalism and fundamentalism formed flip sides, or reverse faces, of the same religious enterprise. Communicating and defending the faith encompassed not opposite functions, but mutually reinforcing reflexes of a single interpretive community, which shifted in importance with geographic environment and historic circumstances. When placed on the defensive, fundamentalists appeared reactionary, rigidly defending their sectarian principles (or “fundamentals”) against change from the outside by withdrawing from society. On the other hand, in their desire to evangelize, to “appeal to new constituencies,” and to expand the boundaries of their community, conservative fundamental Protestants appeared forward-looking, adopting novel communication techniques to propagate their message and engaging actively with their surroundings.⁸³ Put differently, this dissertation shows that conservative Protestant Christians looked far less “fundamental” and far more pragmatic in the mission field than they did on the defensive at home. Analysis of missionary communication warrants an emphasis on the evangelical axis of biblicist American Protestantism since spreading the good news represented the basic cultural mandate of missionary radio.

Having stated this, it is important to tease out fully the implications of evangelicalism’s conservative identity in the mission field. Evangelical missionary broadcasters appropriated modernity in a highly selective and self-serving manner, as this dissertation will demonstrate. While use of technology made missionaries appear forward-looking, in reality such a stance was belied by the traditional nature of evangelicals’ religious belief system, their reactionary resistance to modern notions of

racial, gender, or socio-economic equality, as well as the basic liberal democratic freedom of choice, and their often ambiguous stance toward decolonization and the non-aligned movement in the developing world.

Evangelical Modernity: Old Wine in New Wineskins

Building on an important body of scholarship in the study of American religion, the dissertation considers evangelicals as the modern face of biblical Protestantism. Evangelicalism, in Martin Marty's view, is "the characteristic Protestant way of relating to modernity."⁸⁴ Use of media, attention to audience, and mastery of ever-shifting means of contemporary communication principally define evangelical modernity. From its historic beginnings in the eighteenth century, the imperative of communication has characterized American evangelicalism. If, as this dissertation maintains, modernity is the cultural condition of constant change resulting from rapid advances in communication, transportation, and information-processing systems (among other sources), then the evangelical appropriation of media techniques and technology explains how these conservative Protestants have coped with the "quandary of modernity" (James Davidson Hunter) more effectively than any other religious grouping in the United States.⁸⁵

Media use has been a distinctive hallmark of evangelical practice and identity.⁸⁶ Evangelicals have a long history of successful experimentalism with modern communication techniques, dating back to colonial America's Great Awakening.⁸⁷ The evangelical movement had always depended for its survival on its "skills in modern techniques of promotion, organization, and communication."⁸⁸ The English revivalist George Whitfield (1714-1770) pioneered a new system of evangelistic preaching

designed to produce heartfelt conversions by drawing on colloquial everyday speech, dramatic theatrical expression, and the emotional experience of audiences (as opposed to their rational judgment).⁸⁹ Charles Gradison Finney (1792-1875), the most popular revivalist of the first half of the nineteenth century, developed Whitfield's preaching methods into a formal "science," polishing them for middle-class congregations.⁹⁰ Over the course of the century, evangelicals utilized a wide range of media, including camp revival meetings, Sunday School classes, journal publications, cheap Bible tracts and pamphlets, visual aids (such as prophetic charts), and popular hymnody to bring their message to the unconverted masses.⁹¹ At the end of the century, evangelists Dwight Moody (1837-1899) and later Billy Sunday (1862-1935) brought evangelicalism to America's big cities, utilizing successful sales and managerial strategies from the Second Industrial Revolution and the language of commerce to forge uniquely American large urban revivals.⁹² Following the demise of city-wide revivalism in the 1920s, radio presented a means for evangelicals to continue their long-standing romance with communication and technology, extending it into the twentieth century.

Media usage reveals a deep and defining tension within historic American biblical Protestantism between the movement's traditional message and its accommodation with modernity through technology. Numerous scholars have noted this tension between the import of evangelicals' "old-time" religion and their mastery of the modern means of getting it out. Marsden has described the "paradox of revivalist fundamentalism" – namely how a "militantly antimodernist movement eagerly assimilated the latest techniques of mass communication – and beyond that the idiom and format of popular entertainment – in order to propagate their old-time faith."⁹³ Randall Balmer has

observed the same tension throughout evangelical history: “The skill evangelicals display at popular communication – and the use of communication technology – is at odds with their image as somehow backwards or renegade.”⁹⁴ In his study of contemporary radio and the religious right, media scholar Paul Apostolidis has made the same observation:

“... although evangelical and fundamentalist theology and cultural norms are definitely antimodern, religious conservatives have adeptly used modern communication technologies to spread their version of the gospel. They have also adjusted to technological innovations with quickness, vigor, and even a sense of fascination with the new.”⁹⁵

“Aggressively traditionalist in its explicit message,” Apostolidis summarizes, “the Christian right avidly embraces change and sophistication in its media.”⁹⁶

The dilemma posed by communication for modern American evangelicals represents a reformulation of a perennial challenge for traditional religion in a contemporary landscape. In a well-known parable intended as a rebuke to first-century Jewish traditional religion as conducted by conservative groups such as the Pharisees and Sadducees, Jesus instructed his disciples that the new wine of the gospel required new wineskins. Old, hide-bound methods and practices based strictly on Pharisaical observance of the law could not contain the new seed of the kingdom of God. Writing nearly two millennia later, conservative American religious broadcasters modified Jesus’ analogy in an important way without realizing it. Arguing that it constituted a timeless unchanging tradition, free from historicist interpretation, conservative evangelicals defended the gospel as “old wine” that could not be altered, much less adulterated by the intellectual and cultural advances of Western industrial society. To communicate the “old, old story” more effectively, however, broadcasters espoused adopting the latest, most pragmatic methods – in effect, new wineskins. In the rhetoric of missionary radio

advocates, the combination of the power of the old wine with new wineskins promised earth-shaking results of historic proportions:

“With the radio, the airplane, new linguistic methods, the printed word, gospel boats, visual aids, better equipment, and a rising percentage of literacy, we have marvelous advantages that our predecessors never dreamed of,... Surely if we combine these modern methods with old-fashioned prayer, old-fashioned faith, old-fashioned vision, old-fashioned preaching and old-fashioned power of the Holy Spirit, the period that lies ahead will be the most glorious and the most fruitful that has ever been known.... We can, by God’s help, IN THIS GENERATION accomplish that which has been left undone by all preceding generations.”⁹⁷

Missionary radio thus embodied a complicated, even paradoxical, stance and a selective appropriation of certain features of modernity, adapting its technical products and instrumental outlook while steadfastly resisting its underlying naturalist outlook, historicist mindset, and developmental logic of permanent, unceasing change.

The Conservative Evangelical Missionary Radio Enterprise

The dissertation analyzes American evangelical communication in the historical context of the modern missionary movement, begun by Protestants in the late eighteenth century. Protestant missions have been an important channel for American influence overseas throughout this country’s history. During the nineteenth and twentieth centuries, the foreign mission enterprise in America exceeded in size and resources almost any other “reform or benevolent organization” in the United States. Religious groups sent abroad larger quantities of Americans and more highly educated citizens than any other census category except short-term traveler.⁹⁸ By 2000, American churches had 70,000 active American missionaries overseas.⁹⁹

Despite its importance, the history of the American missionary movement is a relatively neglected field, on the outskirts of American religious history.¹⁰⁰ Historians of American religion have yet to appreciate the missionary nature of American fundamentalism prior to WWII, which comprises a “critical missing piece” of American religious history.¹⁰¹ Yet the growth in the missions during the twentieth century has been fueled almost entirely by evangelical and conservative evangelical groups. In the 1930s, mainline Protestant missions, affiliated with historic denominations and which had fueled the initial expansion of missions during the nineteenth century, outnumbered their conservative counterparts by as much as ten to one. By 1982, however, these figures were reversed; ten out of eleven North American Protestant career missionaries came from conservative agencies.¹⁰²

Historians of American religion, furthermore, have viewed radio as largely peripheral to the modern missionary movement.¹⁰³ Yet international broadcasting represented one of the most important missionary advances of the twentieth century in the estimation of both its advocates and experts alike. David B. Barrett, the editor of the *World Christian Encyclopedia* and a respected authority on world missions, considers IRBs as “the major single innovation” of the present missions era.¹⁰⁴ In addition to the world-wide cultural impact of their programming, IRBs introduced organizational innovations, pioneering the transformation of the larger conservative evangelical missionary movement from “more generalized” self-sufficient, faith-based mission societies to highly specialized, technologically driven “parachurch agencies,” which has become the “dominant form of late-twentieth-century American evangelicalism.”¹⁰⁵

Missionary broadcasters prided themselves on preaching the “pure” and “simple” gospel over the airwaves, free of liturgical or ecclesiastical adornment. The conservative evangelical gospel, as heard on missionary radio stations, included three basic components, which distinguished it from the Christian presentation made by other Protestant groups as well as Catholic mission organizations. First, it emphasized a high view of the Bible as the inerrant Word of God and the clear and final source of authority for faith and living. Second, missionary broadcasters called for the experience of conversion as a distinct event. Conversion on missionary radio was a straightforward, highly personalized transaction; listeners uttered a prayer of repentance and placed their faith in Christ’s death on the cross as a sacrifice for their sin. Third, missionary broadcasters called converted believers to a lifestyle of evangelism and missions (as opposed to social activism). Broadcasters linked evangelistic emphasis closely with a premillennial theology, arguing that the evangelization of the entire world (in fulfillment of Christ’s final command to preach the gospel to all nations, known as the Great Commission), would precede the Second Coming of Christ, which in turn would herald the commencement of Jesus’ thousand-year reign on earth.

Missionary broadcasters preached a “positive” religious message designed for the mission field. This “positive” message contained two components. First, missionary broadcasters refrained from attacking other religious groups, particularly Roman Catholics, who constituted a formidable, entrenched power throughout Latin America. Second, conservative evangelical broadcasters refrained from promoting any particular church doctrine - that is distinctive teachings linked with specific Protestant denominations (such as the baptism of the Holy Spirit favored in Pentecostal circles).

Avoidance of denominational entanglements derived from the background of missionary stations as nondenominational “faith-based” missions and from the distaste for such divisions among nationals in the mission field. An African station worker with ELWA succinctly summarized the common attitude towards religious divisions among nationals:

“We Africans feel that denominations are the carry-over of foreigners’ troubles into our country. We don’t care to be called by any denominational name, but we want to be known simply as Christians. If a missionary radio station should promote denominations, it can only stir up a fighting spirit among believers in Christ. Our job is to evangelize in the Name of Christ and to lead people to become Christians, not denomination members.”¹⁰⁶

Missionary broadcasters refrained from organizing churches for their radio converts in order to avoid dangerous ecclesiastical entanglements, allowing them to claim a purity of purpose in their gospel presentation. Clarence Jones considered HCJB’s policy of “positive” religious programming one of the two keys to the station’s success in Ecuador, along with its agreement to refrain from all political programming. Initially adopted by Station HCJB in 1931, the presentation of “positive” evangelical religion (as opposed to strident or sectarian fundamentalist teaching) became a hallmark of missionary broadcasting adopted by all stations after 1945.

Missionary radio stations mixed their positive presentation of the gospel message with a blend of information, education, news, and cultural programming. Broadcasters presented extensive “[n]ewscasts, science, health, agricultural, and music programs” not only to placate government licensing officials, but as a deliberate ‘bait’ to gain listeners’ ears, enter their minds, and reach their hearts with the gospel message.¹⁰⁷ Broadcasters blended programs produced in the United States by major evangelical radio personalities such as Charles Fuller, Walter Maier, M.R. DeHaan, and later Billy Graham (and often

translated into vernacular languages) with a steady array of programs produced locally (often in the station) and performed by national announcers.

Though “positive,” conservative evangelicals’ presentation of the gospel was, of course, far from “pure.” American missionary broadcasters of necessity communicated a specifically American Christianity – “an expression of Christian faith formed within and by American culture.”¹⁰⁸ The twentieth century witnessed the gradual, but total domination of the missionary movement by the United States. The number of American career missionaries abroad grew from 11,000 in 1935 to 35,000 in 1980.¹⁰⁹ Whereas Americans represented roughly one-third of all Protestant missionaries around the world in the century’s first decade, they represented over 70% by 1970.¹¹⁰ Studying patterns of modern world missions across three centuries, Andrew Walls identifies the following genetic characteristics associated with American missionary activity: “vigorous expansionism; readiness of invention; a willingness to make the fullest use of contemporary technology; finance, organization, and business methods;... and an approach to theology, evangelism, and church life in terms of addressing problems and finding solutions.”¹¹¹ In his study of the global expansion of the postwar American evangelical movement, Richard Pierard identifies “emphasis on practical action, boldness, and observable results as well as... rugged individualism, divisiveness, and an entrepreneurial spirit among mission workers” as distinctively American traits.¹¹² Direct ties with their partners in North America set conservative evangelical groups in Latin America apart from their mainline or Pentecostal counterparts.¹¹³ This dissertation will show how conservative evangelical broadcasters communicated a constellation of American values through their broadcasting activity, particularly in the area of radio

reception, including pragmatism, entrepreneurship, and individualism, as well as faith in technology and technological instrumentalism, quantification, and a predilection for the commercial market economy.

In providing an analysis of the evangelical media in a global setting, the dissertation thus provides a transnational, but quintessentially American story. By demonstrating the subtle (even hegemonic) influences of missionary radio practice, the study adds a new dimension to current understanding of post-WWII cultural imperialism emanating from the United States toward the developing, non-Western world. American influence seeped abroad in subtle ways through the medium of religion and technology. Contrary to evangelical thinking, radio stations were not pure, neutral instruments for propaganda. Instead, as this study will show, missionary broadcasting implemented a series of non-religious values, heavily draping the gospel overseas in American terms.

Historical Contexts

World Christianity

The dissertation situates the development of missionary radio in two world historical contexts: the rise of global Christianity and the transistor communication revolution. The second half of the twentieth century witnessed “a fundamental historical shift in the character and fortunes of the Christian religion” – namely, a global extension of its reach and a fundamental shift of its axis southward.¹¹⁴ Over the past two centuries, the Christian church overall grew from 208 million adherents in 1800 to 1.4 billion people in 1980. While the Christian percentage of world population remained unchanged (at roughly 33%), the demographic basis for this trend shifted dramatically. According to

missiologist Wilbert Shenk, nearly nine out of every ten Christians (86%) in the world in 1800 was classified as European, including North Americans.¹¹⁵ By 1900, the figure of Christians worldwide identified as “European” dropped slightly to 70.6%.¹¹⁶ At the Protestant world missionary conference held in Edinburgh, Scotland in 1910, only 17 of 1,200 delegates represented non-Western nationals from the mission field, including a small contingent of Asians and no Africans.¹¹⁷ Yet, a century later in 2000, less than one-third (28%) of world Christians came from Europe, while 60% of all professing Christians currently live in the global South and East.¹¹⁸

The dissertation places missionary radio at a critical historical moment of the transformation of Christianity from a predominantly Western religion to a world religion largely defined by non-Western adherents in Africa, Asia, and Latin America.¹¹⁹ The appearance of a world Christianity dominated by countries in the Southern hemisphere comprises “one of the two or three most important events in the whole of church history” and “one of the transforming moments in the history of religion worldwide.”¹²⁰ The emergence of an indigenous Southern Church has not only produced a revitalization of Christianity as a world religion, on a competitive level with Islam, but will likely result during the twenty-first century in a reconstitution of Christian theology and practice, as well as a reorientation of global geopolitics.¹²¹

Radical evangelical and Pentecostal Protestant sects have made the most dramatic progress in the Southern hemisphere during the past half century, along with the Roman Catholic Church.¹²² Sociologists of religion Peter Berger and David Martin consider the rapid spread of evangelical Protestantism “one of the most extraordinary developments” in the contemporary world, comparable in scale and significance to the explosion of

conservative Islam and one of the two “main shifts in world religion during the second half of the twentieth century.”¹²³ The spread of evangelical Protestantism represents a truly world-wide phenomenon and has included some 200 million people in large parts of East and Southeast Asia, the South Pacific, sub-Saharan Africa, Eastern Europe, and the Americas. More than twice as many evangelical Christians lived in Brazil (27 million) and Nigeria (22 million) in 2001 than in Britain; taken together, Brazil and Nigeria contained a greater number of evangelical believers than the United States (40 million).¹²⁴ In 2001, India, South Korea, South Africa, Kenya, and Ethiopia each number at least five million evangelical adherents, while at least eight other African countries, five Asian, and five Latin American countries each had over one million evangelical believers. Given its endurance and the scale of its impact worldwide (with over one billion adherents projected by 2050), Pentecostalism, rather than communism or fascism, may well constitute the most successful social movement of the twentieth century.¹²⁵

The expansion of evangelical Protestantism on two Southern continents – Latin America and Africa – forms an important historical backdrop for this dissertation. In the closing three decades of the twentieth century, Latin America witnessed a scale of religious conversions not seen on the continent since the introduction of Roman Catholicism in the sixteenth century. In 1960, evangelical churches on the continent numbered some 5 million members. By 1980, the number of *evangélicos* (the term used most often by Latin American Protestants to describe themselves) had grown eight-fold to 40 million.¹²⁶ According to various estimates, “born-again” Protestants comprised 10-15% of Latin Americans in 1985 and considerably more (as much as a third of the population) in nearly a half dozen countries, including Brazil, Chile, Nicaragua, and

Guatemala.¹²⁷ Growth projections in the early 1980s estimated that by the early twenty-first century as much as one-third of the total Latin American populace could be evangelical.¹²⁸ In 1985, Brazil contained over 4,000 evangelical churches run by some 15,000 pastors – a number exceeding Brazil’s roughly 13,000 Catholic priests.¹²⁹

Given its scale and vibrancy, missiologist Andrew Walls considers African Christianity as “potentially the representative Christianity of the twenty-first century.”¹³⁰ Whereas in 1950, 34 million Christians made up 15% of Africa’s population, the number had grown to 75 million (25%) by 1965 and 146 million in 1980 – nearly 60% of the total people on the continent.¹³¹ By 2005, the total number of African Christians approached 400 million.¹³² In several countries, such as Burundi (74%), Equatorial Guinea (81%), and Congo (92%), the number of total Christians has exceeded three-fourths of the population.¹³³ Much of the African growth was fueled by Africa Independent or Africa Initiated Churches (AICs). By 1984, Africans had founded some 7,000 “indigenous, independent denominations” in forty-three countries.¹³⁴

Missionary Radio Audiences: Ecuador and Liberia

In order to bring the growth of world Christianity down to an empirically manageable size, this study analyzes the spread of Protestant religion via radio in two countries during the middle decades of the twentieth century. Though this work is not intended as a social or cultural history of listeners, a brief overview of religion in these two countries where missionary broadcasters operated will provide valuable background.

Stations HCJB and ELWA operated in two markedly different religious environments. Ecuador has historically been one of the staunchest Catholic nations in the

world. One of Spain's earliest possessions, conquered in 1543, the capital city Quito almost immediately became a major monastic center and Jesuit stronghold in the New World. Ecuador rapidly developed a strong reputation for its religious fervor. A concordat signed with the Vatican made Catholicism the official Ecuadoran state religion. In 1873, the country formally dedicated itself by act of Congress to the Sacred Heart of Jesus, followed by a comparable action in 1892 to the Immaculate Heart of Mary.¹³⁵ While formally disestablished, the Catholic Church in the twentieth century has enjoyed a friendly relationship with the Ecuadoran government particularly when church-state relations were redefined shortly after World War II.¹³⁶ The Constitution's formal respect of religious freedom did not disrupt the position of institutional dominance and cultural privilege enjoyed by the Catholic Church following centuries of spiritual rule. In 1974, over nine-tenths (90-95%) of Ecuadorans were Roman Catholic, although many practiced syncretistic forms of Catholicism, and Indian tribes in remote areas still practiced forms of animism.¹³⁷ In a country of 6.7 million, Ecuador had nearly 1,500 priests, over 500 parishes, 721 schools and 240 institutes, serving 5,871,000 communicants.¹³⁸

A Catholic stronghold, Ecuador has proved the most resistant country in Latin America to Protestant evangelization. Protestant evangelization began only in the early twentieth century, where it was associated directly with the rise of the Liberal party. The growth of Protestantism in Ecuador has been overwhelmingly the work of conservative evangelical and Pentecostal churches. Evangelicals made few inroads prior to 1949, when only 1,030 Protestants existed in the country (0.03% of the population). Ecuador's population divided geographically and ethnically between its sierra highlands, where the majority of Ecuadorans lived as of 1970, and the coastal plains and urban areas

(principally the capital Quito and major port Guayaquil), with a small vestige in the eastern jungle, known as the Oriente. Representing nearly half of Ecuador's population, Quechua-speaking Indian peoples worked the impoverished land of the high plains, while another large segment of mestizos inhabited the coast.¹³⁹ Prior to 1970, evangelicals made their greatest inroads among the poorer classes and along the coastline, traditionally a Liberal enclave, experiencing almost nonexistent results among Indian tribes in the Amazon basin.

The religious situation in Liberia contrasted markedly from Ecuador. As a colony founded by free black settlers from the United States in 1822, Liberia had a long historical relationship with Protestant churches in the United States, many of which were transplanted directly to the African environment along with the country's founders. Given the ties with the United States during the nineteenth century, historic Protestant churches, unlike Ecuador, enjoyed a far greater presence than conservative evangelical or Pentecostal ones during the postwar period covered in this dissertation. According to official report, the dominant Protestant religions in Liberia as of 1960 were Baptist, Methodist, Episcopalian, and Lutherans, although Roman Catholic churches also existed.¹⁴⁰ Under the postwar regime of President William Tubman, Protestantism enjoyed a quasi-establishment status in Liberia. Membership in a Protestant church constituted a prerequisite for political advancement among the ruling, Western-oriented Americo-Liberian elite.¹⁴¹ Postwar government leaders, including President Tubman and Vice President Tolbert, enjoyed prominent positions as lay ministers and denominational leaders, frequently raised funds for local mainline churches, and regularly employed explicit Biblical references in political speeches.¹⁴²

As in Ecuador, evangelization of remote physical regions in Liberia (known as the hinterland) posed the greatest challenge to Protestant missions. The Liberian population is made up of numerous tribal groups, ranging in total number from sixteen to thirty (depending on classification).¹⁴³ Tribal allegiance in Liberia forms a stronger basis of identification than the nation-state.¹⁴⁴ While the coastal area and capital city Monrovia had been evangelized as part of the country's original settlement, numerous tribal groups in the hinterland remained unreached as late as WWII and continued to practice traditional animistic religion. During the postwar period, a wide array of Lutheran, Baptist, Methodist, Pentecostal, and conservative evangelical missions operated in the area, benefiting from the government's "open door" policy, which intended to use mission societies as an instrument of modernization designed to incorporate autonomous local tribal groups into the modern Liberian nation-state.

"Transistor Revolution"

In addition to Protestant Christianity, the growth of world-wide communication facilities during the second half of the twentieth century also formed an important backdrop to the spread of missionary broadcasting. Advances in semiconductor technology prompted an historic revolution in communications in the developing world, as massive numbers of consumer electronics devices flowed from industrial nations across the globe. Invented in 1948 by Bell Laboratories, world sales of transistors reached \$115 million within a decade by 1956.¹⁴⁵ A series of refinements in manufacturing methods and several technical advances, which enabled semiconductor devices to amplify high-frequency radio signals (initially AM, later FM, and finally

shortwave), led to the “gradual dissemination of transistors into consumer products.”¹⁴⁶ A small American company named IDEA built the first transistor radio in December 1954 (the Regency TR1), using transistors fabricated by Texas Instruments. The Japanese firm Sony, however, created the first mass transistor radio (the TR-55) in August 1955.¹⁴⁷ Japanese firms such as Sony, Toshiba, and Hitachi dominated the world market for transistor radios during the 1960s, the major period of the product’s history covered by this dissertation. By 1960, 130 Japanese companies manufactured transistor sets. Japanese companies exported \$140 million worth of transistor radios in 1960, the country’s second largest export after shipping. Nearly all radios exported by Japan (85%) contained transistors. By 1963, car radios and portable radios manufactured in the United States used \$33.2 million worth of transistors, nearly 15% of the total military-industrial-consumer demand in the United States for the year.¹⁴⁸

The advent of the transistor ushered in a new era of world communication. To appreciate the magnitude of the communication explosion, it is helpful to realize the paucity of reception facilities in most developing countries on the eve of the transistor revolution. At the time of HCJB’s inaugural broadcast, only 150 receivers existed in the nation of Ecuador and six in the capital city of Quito.¹⁴⁹ When missionaries with Station ELWA arrived in Africa, radios were virtually nonexistent. According to VOA estimates, a mere 4,000 sets existed in Liberia in mid-1953. Using a projected population figure of roughly 860,000, this means that less than .5% of Liberians owned radios – or that just over 4.5 sets existed for every thousand people in the country.¹⁵⁰ Roughly 1.5 million receivers existed in Africa as a whole in 1950 - less than 1% of world total – to be compared with nearly 98 million in the United States, 64 million in Europe, and 11.5

million in Asia.¹⁵¹ Statistically, nearly one of every two radio-rich Americans owned receivers by 1950.¹⁵²

Transistors facilitated the expansion of broadcast communication facilities in less developed countries (first in radios and later television sets) by dramatically reducing the cost of reception. Between 1955 and 1997, the number of radio receivers in the world increased ten-fold from 237 million to 2.4 billion¹⁵³ The number of radio receivers in Africa as a whole increased steadily from 1.5 million (1950) to 2.7 million (1957) before nearly quadrupling to 10.0 million (1965).¹⁵⁴ Between 1965 and 1986, Africa experienced the most rapid rate of growth in receiver ownership of any region in the world and nearly five times the rate of increase in the world as a whole, doubling over ten years to 20.0 million (1975) and then nearly quintupling again in the ensuing decade to 94.0 million (1986), although such a figure still fell vastly below that of the industrialized nations and less than 10 per cent of the world total.¹⁵⁵ Due to its experience as a market for American radio manufacturers beginning in the 1920s, Latin American countries historically enjoyed a higher level of radio ownership and hence experienced significant, but comparatively less sudden radio receiver growth than other developing regions of the world after WWII.

Due to the advance of the transistor, radio remained the predominant form of communication in much of the developing world throughout the remainder of the twentieth century. Due to vast distances and lack of transportation infrastructure, African governments and citizens relied heavily on radio for purposes of communication. High rates of illiteracy in Africa also contributed to radio's popularity on the continent, where it expanded faster as a medium of mass communication than print media.¹⁵⁶ On the eve of

independence, radio served as an important political medium in Africa. Nkrumah of Ghana spread his pan-African nationalist movement for self-government “through newly-bought radio-sets in every village throughout the continent.”¹⁵⁷ Between roughly 1957 and 1972, the continent underwent a “truly fantastic expansion” in broadcasting and receiving facilities.¹⁵⁸ A station worker at ELWA commented on radio’s significance for Africa in the early 1960s:

“There is not only a population explosion in Africa today, but because of the transistor radio there is also an information explosion. It is being said in or interior villages it is possible for an illiterate man of today to be better informed than an educate man was ten years ago.”¹⁵⁹

UNESCO estimated that radio sets during the early 1960s reached 40% of the population in Africa (since many of them were communally owned), as opposed to the 10% reached by the circulation of newspapers. Sound broadcasts were produced in more languages than newspapers, and UNESCO estimated that 80% of African adults received their news via radio.¹⁶⁰

The rise of global Christianity and the spread of transistor radios form important, closely related contexts for the study of missionary radio. Missionary broadcasters hoped to use the new receivers to spark the world-wide revival of conservative evangelical Christianity. Transistorized communication enabled stations in Ecuador and Liberia to expand their programs of pre-tuned receivers dramatically after 1960. “The ubiquitous little pre-tuned radio receiver,” Clarence Jones stated, “really come [sic] into its own with the advent of transistors.”¹⁶¹ The genealogy of missionary receiver programs traced in this dissertation provides an important prehistory for both the global revival of evangelicalism and the spread of radio communication in the developing world during the closing decades of the twentieth century. When missionary broadcasters with HCJB and

ELWA arrived in Ecuador and Liberia, respectively, they found mostly barren spiritual soil, few converts, and not many more radios. The account of missionary radio during the period 1931 to 1970 is therefore a story of considerable struggle, persistence, and ingenuity, which provides an important antecedent for the subsequent rise of evangelical Protestantism and the spread of a commercial receiver market in Latin America and West Africa. Conservative evangelical missionary radio stations served as important conduits not only for American cultural values, such as problem-solving and entrepreneurship, but for revivalist religion and Western consumer electronics as well.

Chapter Summary and Dissertation Argument

The dissertation is divided into two parts. Part I analyzes the history of Station HCJB, the first Protestant missionary radio station and “Pioneer Missionary Broadcaster,” from its founding in Ecuador in 1931 through 1959, when transistor radios began arriving in the country. Part II pairs two related foci: the formation of Station ELWA in Liberia in 1954 (and its receiver department) as the evangelical voice of Africa, and the organization of the transistor receiver project in Chicago the same year. Part II charts the closely related history of these two conservative evangelical missionary radio ventures, tracking the project over its five-year history and following the station’s receiver department until 1970, when it reached a crucial turning point.

Part I, then, tells the story of HCJB. Chapter 2 outlines the origins of the “Pioneer Missionary Broadcaster” HCJB in South America, tracing its roots to the revival of conservative evangelical radio evangelism in the Chicago area during the 1920s and to the innovative vision of Clarence Jones. Chapter 3 delineates the origins of the station’s

receiver department, the Radio Circle, detailing the creative solutions to the “receiver problem” in Ecuador forged by Jones, notably the use of communal radio listening in the homes of national Christians. Chapter 4 carries the account through the worldwide post-WWII expansion of missionary radio, chronicling attempts by Jones and amateur Christian electronics associations to produce radios for missionary use, including a low-cost receiver for the masses in developing countries. Chapter 5 brings the first section to a close by noting the curious revival of the Radio Circle under Marion Krekler in 1949 as a small-scale manufacturing operation that produced hundreds of radios for distribution in villages located in the remote Ecuadoran highlands. Officials like Krekler who worked in the Radio Circle, the chapter demonstrates, firmly believed that their labors advanced the cause of the conservative evangelical gospel by breaking down barriers of opposition to their religious message among Catholics and the rural poor.

The second half of the dissertation shifts the analysis of missionary broadcasting reception to two other locations: West Africa and the American Midwest. Part II weaves the closely related stories of two related ventures: Station ELWA and the missionary transistor receiver project, both initiated by a young American missionary, Abe Thiessen. Like chapter 2 which opened the first half of the dissertation, chapter 6 charts the origins of Station ELWA in Liberia in 1954, tracing its origins similarly to the Chicago area (and to conservative evangelical Wheaton College, the alma mater of Billy Graham). Chapter 6 tells a story of scarcity; like Jones’ Radio Circle, ELWA officials devised social solutions to receiver shortages that allowed them to maximize resources, while monitoring the location and usage of sets. Chapters 7 and 8 narrate the chronicle of Thiessen’s project to custom-build a missionary “radio for every village,” chronicling

how complicated engineering trade-offs, lack of field data, and strained field relations made it practically difficult to design and build a transistor radio for the mission field. In chapter 9, the dissertation returns to Station ELWA during the decade of the 1960s, recounting the significant impact of commercialization on the station's receiver department, culminating in its dissolution in 1970 as part of a world-wide retrenchment of missionary receiver programs.

The history of missionary radio receiver programs provided in this dissertation, intentionally demonstrates the innovativeness of conservative evangelical American broadcasters. To address the shortage of sets abroad, missionary broadcasters custom produced radios overseas as well as at home and explored at length ways to mass produce sets. They utilized commercial suppliers, proprietary distribution methods (such as missionaries and national Christians), and eventually the market. In conditions of extreme scarcity, they developed social solutions that maximized the use of scant receivers; when affordable techniques came along, such as the transistor, they turned to technology wholeheartedly as the solution to their reception needs. In short, missionary broadcasters showed themselves not inflexible and reactionary, but pragmatic and adept at responding to the communication needs of their audiences, turning those needs to their own evangelistic advantage.

The core argument of the dissertation is that missionary radio helped to legitimize conservative evangelical American religion in the countries where it operated. The dissertation demonstrates this in three primary ways. First, it shows through a steady accumulation of evidence that missionary broadcasters believed legitimation was the major contribution of radio, which they tied to the "penetrative power" and "continuous

coverage” which broadcasting provided. Second, it shows how the logic of capture – conversion through repetitious exposure to the gospel – worked to strengthen the claims of conservative evangelical broadcasters. Third, the dissertation tracks an array of receiver solutions generated by missionary broadcasters over four decades to demonstrate not only broadcasters’ innovativeness and persistent belief in their enterprise, but to illustrate the myriad channels through which evangelical influence seeped overseas. As radios became increasingly mundane items in developing countries during the middle decade of the twentieth century, missionary broadcasters gained a more familiar reception for their conservative evangelical message. By exposing foreign audiences to the claims of their gospel and thereby reducing their cultural resistance, missionary broadcasters sowed seeds for widespread Protestant revival in the southern hemisphere after 1970.

Originality and Significance of Dissertation

The theoretical and methodological frameworks underlying this dissertation distinguish it from other approaches to the study of religious broadcasting. Rather than considering modernity in terms of secularization, and explaining the success of contemporary evangelicalism and religious radio in terms of the theory’s failure to account for the persistent religiosity of global civil society, as many religious scholars and radio studies have done, the dissertation considers modernity in positive terms as the circulation of ideas and meanings through a variety of personal, social, institutional, and material exchange networks since the eighteenth century.¹⁶² Seen in this way, the dissertation argues that evangelical communicators have never ceased being modern since the dawn of the American republic, which tied revivalism to the advance of the

physical frontier, the growth of political democracy, and the spread of industrial organization. International religious radio represents a continuation of a centuries-old American tradition of communication across national boundaries onto a global stage, extending specifically American religious meanings into a new cross-cultural vortex.

At the same time, unlike contemporary media and radio studies, which view communication primarily as a set of semiotic texts, this dissertation considers broadcasting primarily as a set of technological and institutional practices which enabled, yet delimited the circulation of specifically religious meanings. The dissertation ties the significance of religious radio not to the interpretation of programs encoded by producers and decoded by subjective audiences, but to the hard material renderings inscribed by broadcasters in receiving artifacts themselves.¹⁶³ Broadcasters had a specific cultural agenda and a clearly intended message. Nonetheless, analysis of their technical reception activities reveals as much (if not more) about the parameters and operating assumptions of the missionary broadcasting enterprise as does a textual analysis of missionary programs.

In addition to its theoretical offerings, the dissertation makes numerous specific contributions to current scholarship. First, the dissertation draws on extensive new material located in IRB archives which scholars have not previously examined in order to construct a detailed history of missionary broadcast reception. Second, by delineating the distinctly American and evangelical identity of missionary radio, the dissertation helps to explain the exceptionalism of American international religious broadcasting. Third, by conceiving of global modernity in terms of networks of exchange and by closely analyzing religious communication efforts in the mission field, the dissertation sheds

light on the constitution of evangelical modernity, illuminating how this dynamic extended to a global stage. Fourth, as a study of missionary radio distribution programs in two less-developed countries, Ecuador and Liberia, during the transition to the era of the transistor radio, the study sheds light on how radios receivers diffused in the developing world, a much under-studied topic. Finally, by conceiving of international religious broadcasting as a process of capture (to be discussed later in depth in my case studies), the dissertation weaves together the history of technology and culture in a novel way and demonstrates the possibilities and perils of radio as a tool for the material communication of political and religious propaganda.

¹ Daniel Headrick, *The Invisible Weapon: Telecommunications and International Politics, 1851-1945* (Oxford University, 1991) and "Shortwave Radio and Its Impact on International telecommunications between the Wars," *History and Technology* 11 (1994): 21-32.

² Donald Browne, *The Limits of the Limitless Medium* (Praeger, 1982), chapter 2; Philo Wasburn, *Broadcasting Propaganda: International Radio Broadcasting and the Construction of Political Reality* (Praeger, 1992), chapter 1.

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- ³ On the origins of the VOA, see Holly Cowan Shulman, *The Voice of America: Propaganda and Democracy, 1941-1945* (University of Wisconsin, 1990).
- ⁴ James Schwoch, *The American Radio Industry and its Latin American Activities, 1900-1939* (University of Illinois, 1990) and Fred Fejes, *Imperialism, Media, and the Good Neighbor: New Deal Foreign Policy and Shortwave Broadcasting to Latin America* (Ablex, 1986).
- ⁵ On Walter Maier and the Lutheran Hour, see Tona Hangen, "Man of the Hour: Walter A. Maier and Religion by Radio on *The Lutheran Hour*" in M. Hilmes and Jason Loviglio, eds., *Radio Reader: Essays in the Cultural History of Radio* (Routledge, 2002).
- ⁶ Richard E. Wood, "Language Choice in Transnational Radio Broadcasting," *Annenberg Journal of Communication* 28 (Spring 1979): 112-24, cited in Lausanne Committee for World Evangelization, Frances Gray, contr., *Radio in Mission: A Handbook on the Use of Radio in World Evangelization* (Lausanne Committee for World Evangelization, 1989).
- ⁷ Robert Fortner, "Saving the World? American Evangelicals and Transnational Broadcasting," in Quentin Schultze, ed., *American Evangelicals and the Mass Media* (Eerdmans, 1990), 308, 322.
- ⁸ Trans World Radio, *2003 Annual Ministry Review*, Vol. 24, No. 3.
- ⁹ Trans World Radio, *2003 Annual Ministry Review*, Vol. 24, No. 3.
- ¹⁰ "FEBC Summary Statistics," <http://www.febi.org>, August 28, 2005.
- ¹¹ Jeffrey K. Hadden, "The Globalization of American Televangelism," in Roland Robertson and William R. Garrett, eds., *Religion and Global Order* (Paragon House, 1991), 240.
- ¹² Robert Fortner, "Saving the World? American Evangelicals and Transnational Broadcasting," in Quentin Schultze, ed., *American Evangelicals and the Mass Media* (Eerdmans, 1990).
- ¹³ Clarence W. Jones, *Radio: The New Missionary* (Moody, 1946), chapters 10 and 11, and "Station Groundwork," Report of the World Conference on Missionary Radio, June 16-19, 1955, Folder 1, Box 35, Collection 86 (International Christian Broadcasters), Billy Graham Center Archives (BGCA), Wheaton College, Wheaton, IL.
- ¹⁴ Rosalind Williams, "Nature Out of Control: Cultural Origins and Environmental Implications of Large Technological Systems," in *Cultures of Control*, Miriam Levin, ed. (Harwood Academic Publishers, 2000).
- ¹⁵ Rosalind Williams, "Nature Out of Control: Cultural Origins and Environmental Implications of Large Technological Systems," in *Cultures of Control*, Miriam Levin, ed. (Harwood Academic Publishers, 2000).
- ¹⁶ Anthony Giddens, *The Consequences of Modernity* (Stanford University, 1990).
- ¹⁷ David Harvey, *The Condition of Postmodernity: An Enquiry into the Origins of Cultural Change* (Blackwell, 1989).
- ¹⁸ James W. Carey, "A Cultural Approach to Communication" in *Communication as Culture: Essays on Media and Society* (Routledge, 1989).
- ¹⁹ Julian Hale, *Radio Power: Propaganda and International Broadcasting* (P. Elek, 1975); Philo C. Wasburn, *Broadcasting Propaganda: International Radio Broadcasting and the Construction of Political Reality* (Praeger, 1992); Gary Rawnsley, *Radio Diplomacy and Propaganda: the BBC and VOA in International Politics, 1956-64* (St. Martin's, 1996); Michael Nelson, *War in the Black Heavens: the Battles of Western Broadcasting in the Cold War* (Syracuse University, 1997); and Walter Hixson, *Parting the Curtain: Propaganda, Culture, and the Cold War, 1945-1961* (St. Martin's, 1997).
- ²⁰ Daniel Headrick *Tools of Empire: Technology and European Imperialism in the Nineteenth Century* (Oxford University, 1981) and *The Invisible Weapon: Telecommunications and International Politics, 1851-1945* (Oxford University, 1991) and Peter Hugill, *Global Communications since 1844: Geopolitics and Technology* (Johns Hopkins, 1999).
- ²¹ Studies of the VOA include Holly Cowan Shulman, *The Voice of America: Propaganda and Democracy, 1941-1945* (University of Wisconsin, 1990); David Krugler, *The Voice of America and the Domestic Propaganda Battles, 1945-1953* (University of Missouri, 2000); Alan Heil, *Voice of America: A History* (Columbia University, 2003). See also, Erik Barnouw, *The Golden Web: A History of Broadcasting in the United States, Volume II – 1933-1953*, (Oxford University, 1968). For technical histories of the VOA, see Robert W. Pirsein, *The Voice of America: A History of the International Broadcasting Activities of the United States Government, 1940-1961* (Arno, 1979) and Vicki Brimmer and Fred Wulff, *A Technical History of the VOA Network*, Voice of America - Office of Engineering, November 20, 1995, unpublished manuscript.
- ²² For a study of the influence of American commercial broadcasting abroad, see James Schwoch, *The American Radio Industry and its Latin American Activities, 1900-1939* (University of Illinois, 1990) and

Fred Fejes, *Imperialism, Media, and the Good Neighbor: New Deal Foreign Policy and Shortwave Broadcasting to Latin America* (Ablex, 1986). On the role of amateur operators see Jerome S. Berg, *On the Short Waves, 1923-1945: Broadcast Listening in the Pioneer Days of Radio* (McFarland, 1999).

²³ Clarence W. Jones, *Radio: The New Missionary* (Moody, 1946); Gleason Ledyard, *Sky Waves: The Incredible Far East Broadcasting Company Story* (Moody, 1963); Jane Reed and Jim Grant, *Voice Under Every Palm: The Story of Radio Station ELWA* (Zondervan, 1968); Paul Freed, *Towers of Eternity: The Inspiring Story of Trans World Radio* (Trans World Radio, 1968) and *Let The Earth Hear* (Thomas Nelson, 1980); Lois Neely, *Come Up To This Mountain: The Miracle of Clarence W. Jones & HCJB* (Tyndale House, 1980); Frank S. Cook, *Seeds in the Wind: The Story of the Voice of the Andes, Radio Station HCJB* (World Radio Missionary Fellowship, 1981); Eleanor G. Bowman, *Eyes Beyond the Horizon* (Thomas Nelson, 1991); and Mark Ward, Sr., *Air of Salvation: The Story of Christian Broadcasting* (Baker Books, 1994).

²⁴ James Wood, *History of International Broadcasting* (Peter Peregrinus, 1992) and *History of International Broadcasting, Volume 2* (IEE, 2000) and Donald Browne, *International Broadcasting: The Limits of the Limitless Medium* (Praeger, 1982) examine contemporary international religious broadcasting. See also Robert Fortner, "Saving the World? American Evangelicals and Transnational Broadcasting," in Quentin Schultze, ed., *American Evangelicals and the Mass Media* (Eerdmans, 1990).

²⁵ See Lynn White, *Medieval Religion and Technology: Collected Essays* (University of California, 1978) and David Noble, *The Religion of Technology: the Divinity of Man and the Spirit of Invention* (Alfred A. Knopf, 1997).

²⁶ J. Harold Ellens, *Models of Religious Broadcasting* (Eerdmans, 1974); Ben Armstrong, *The Electric Church* (Thomas Nelson, 1979); William Fore, *Television and Religion: The Shaping of Faith, Values, and Culture* (Augsburg, 1987); Linda Kintz and Julia Lesage, eds., *Media, Culture, and the Religious Right* (University of Minnesota, 1998); Paul Apostolidis, *Adorno and Christian Right Radio* (Duke University, 2000) and "Scanning the 'Stations of the Cross': Christian Right Radio in Post-Fordist Society" in M. Hilmes and Jason Loviglio, eds., *Radio Reader: Essays in the Cultural History of Radio* (Routledge, 2002); and Susan Harding, *The Book on Jerry Falwell: Fundamentalist Language and Politics* (Princeton University, 2000).

²⁷ Stewart M. Hoover, *Mass Media Religion: The Social Sources of the Electronic Church* (Sage, 1988) and Daniel A. Stout and Judith M. Buddenbaum, *Religion and the Mass Media: Audiences and Adaptations* (Sage, 1996).

²⁸ Hugh Aitken, *The Continuous Wave: Technology and American Radio, 1900-1932* (Princeton, 1985); Susan Douglas, *Inventing American Broadcasting, 1899-1922* (Johns Hopkins, 1987); Susan Smulyan, *Selling Radio: The Commercialization of American Broadcasting, 1920-1934* (Smithsonian Institution, 1994); Robert McChesney, *Telecommunications, Mass Media, and Democracy: The Battle for Control of U.S. Broadcasting, 1928-1935* (Oxford University, 1993); and Thomas Streeter, *Selling the Air: A Critique of the Policy of Commercial Broadcasting in the United States* (University of Chicago, 1996).

²⁹ Hugh Aitken, *Syntony and Spark: The Origins of Radio* (Wiley & Sons, 1976) and Sungkook Hong, *Wireless: From Marconi's Black Box to the Audion* (MIT, 2001).

³⁰ Steve Craig, "How America Adopted Radio: Demographic Differences in Set Ownership Reported in the 1930-1950 U.S. Censuses," *Journal of Broadcasting & Electronic Media* (June 2004): 179-195.

³¹ Louis Carlat, "'A Cleanser for the Mind': Marketing Radio Receivers for the American Home, 1922-1932" in Roger Horowitz and Arwen Mohun, eds., *His and Hers: Gender, Consumption and Technology* (University of Virginia, 1998). See also, Leslie J. Page, Jr., "The Nature of the Broadcast Receiver and Its Market in the United States from 1922 to 1927," *Journal of Broadcasting* 4 (1980): 174-182; Arthur P. Harrison, Jr. "Single-Control Tuning: An Analysis of an Innovation," *Technology and Culture* 20 (1979): 296-321; and K.P. Thrower, "History of Tuning" and P. Rosen, "The Development of the Domestic Radio Receiver," *100 Years of Radio*, September 5-7, 1995, Conference Publication 411, Institute of Electrical Engineers, 1995.

³² Susan Douglas, *Listening In: Radio and the American Imagination* (University of Minnesota, 2004).

³³ Michael Brian Schiffer, *The Portable Radio in American Life* (University of Arizona, 1991) and "Cultural Imperatives and Product Development: The Case of the Shirt-Pocket Radio," *Technology and Culture* 34 (1993): 98-113.

³⁴ For development of this point, see David Clayton, "The Consumption of Radio Broadcasting Technology in Hong Kong, 1930-1960," *Economic History Review* 57 (2004): 691-726. For a similar point with respect

to radio reception in the United States during an earlier period, see Louis Carlat, "A Cleanser for the Mind: Marketing Radio Receivers for the American Home, 1922-1932" in Roger Horowitz and Arwen Mohun, eds., *His and Hers: Gender, Consumption and Technology* (University of Virginia, 1998).

³⁵ Elihu Katz and George Wedell, *Broadcasting in the Third World: Promise and Performance* (Harvard University, 1977).

³⁶ Walter B. Emery, *National and International Systems of Broadcasting: Their History, Operation, and Control* (Michigan State, 1969); Elihu Katz and George Wedell, *Broadcasting in the Third World: Promise and Performance* (Harvard University, 1977); Donald K. Browne, *International Broadcasting: The Limits of the Limitless Medium* (Praeger, 1982); Sydney Head, *World Broadcasting Systems: A Comparative Analysis* (Wadsworth, 1985) and James Woods, *History of International Broadcasting* (Peter Peregrinus, 1992) and *History of International Broadcasting, Volume 2* (IEE, 2000).

³⁷ Mytton, Graham, ed., *Global Audiences: Research for Worldwide Broadcasting, 1993* (John Libbey, 1993).

³⁸ For elaboration of this point, see John Staudenmaier, *Technology's Storytellers: Reweaving the Human Fabric* (MIT, 1985).

³⁹ Katz and Wedell's work proves the exception, but is almost thirty years old. Katz and Wedell, *Broadcasting in the Third World* (Harvard University, 1977) and Sydney Head, *Broadcasting in Africa: A Continental Survey of Radio and Television* (Temple University, 1974).

⁴⁰ Donald K. Browne, *Electronic Media and Industrialized Nations* (Iowa State University, 1999) and Sydney Head, *World Broadcasting Systems: A Comparative Analysis* (Wadsworth, 1985).

⁴¹ The standard works on international broadcasting are Donald K. Browne, *International Broadcasting: The Limits of the Limitless Medium* (Praeger, 1982) and James Woods, *History of International Broadcasting* (Peter Peregrinus, 1992) and *History of International Broadcasting, Volume 2* (IEE, 2000).

⁴² Michelle Hilmes, *Radio Voices: American Broadcasting, 1922-1952* (University of Minnesota, 1997) and *Only Connect: A Cultural History of Broadcasting in the United States* (Wadsworth, 2000); M. Hilmes and Jason Loviglio, eds., *Radio Reader: Essays in the Cultural History of Radio* (Routledge, 2002); M. Hilmes, ed., *Connections: A Broadcast History Reader* (Wadsworth, 2003) and Susan Merrill Squier, ed., *Communities of the Air: Radio Century, Radio Culture* (Duke University, 2003).

⁴³ Michele Hilmes, *Radio Voices: American Broadcasting, 1922-1952* (University of Minnesota, 1997), xii.

⁴⁴ Kate Lacey, "Radio in the Great Depression: Promotional Culture, Public Service, and Propaganda," in M. Hilmes and Jason Loviglio, eds., *Radio Reader: Essays in the Cultural History of Radio* (Routledge, 2002).

⁴⁵ Tona Hangen, *Redeeming the Dial: Radio, Religion, and Popular Culture in American Popular Culture in America* (University of North Carolina, 2002) and "Man of the Hour: Walter A. Maier and Religion by Radio on *The Lutheran Hour*" in M. Hilmes and Jason Loviglio, eds., *Radio Reader: Essays in the Cultural History of Radio* (Routledge, 2002).

⁴⁶ Claude Fischer, *America Calling: A Social History of the Telephone to 1940* (University of California, 1992); Nelly Oudshoorn and Trevor Pinch, eds., *How Users Matter: the Co-Construction of Users and Technologies* (MIT, 2003).

⁴⁷ Ruth Schwartz Cowan, "The Consumption Junction" in Wiebe Bijker, Thomas P. Hughes, and Trevor Pinch, eds., *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology* (MIT, 1987).

⁴⁸ Ronald Kline, *Consumers in the Country: Technology and Social Change in Rural America* (Johns Hopkins, 2000); Ronald Kline and Trevor Pinch, "Users as Agents of Change: The Social Construction of the Automobile in the Rural United States," *Technology and Culture* 37 (1996): 763-795.

⁴⁹ Pablo J. Boczkowski, "Mutual Shaping of Users and Technologies in a National Virtual Community," *Journal of Communication* (Spring 1999): 86-108.

⁵⁰ Ronald Kline, *Consumers in the Country: Technology and Social Change in Rural America* (Johns Hopkins, 2000).

⁵¹ Elizabeth Cohen, *Making a New Deal: Industrial Workers in Chicago, 1919-1939* (Cambridge University, 1991).

⁵² Susan Douglas, *Inventing American Broadcasting, 1899-1922* (Johns Hopkins, 1899-1922) and "Amateur Operators and American Broadcasting: Shaping the Future of Radio" in Merritt Roe Smith and Gregory Clancey, eds., *Major Problems in the History of American Technology: Documents and Essays* (Houghton-Mifflin, 1998); Jerome S. Berg, *On the Short Waves: Broadcast Listening in the Pioneer Days of Radio* (McFarland, 1999); Yuzo Takahashi, "A Network of Tinkerers: The Advent of the Radio and

Television Receiver Industry in Japan," *Technology and Culture* 41 (2001): 460-484; and Kristen Haring "The "Freer Men" of Ham Radio: How a Technical Hobby Provided Social and Spatial Distance," *Technology and Culture* 44 (2003): 734-761.

⁵³ Svante Lindqvist, "Changes in the Technological Landscape: The Temporal Dimension in the Growth and Decline of Large Technological Systems," in Ove Granstrand, ed., *Economics of Technology* (North Holland, 1994); David Edgerton, "From Innovation to Use: Ten Eclectic Theses on Historiography of Technology," *History and Technology* 16 (1999): 111-136.

⁵⁴ See John Krige's review of Trevor Pinch and Nelly Ourdshoorn, *How Users Matter* (MIT, 2003) in the forthcoming issue of *Contemporary Sociology*.

⁵⁵ Thomas Hughes, *American Genesis: A Century of Invention and Technological Enthusiasm* (Viking, 1987).

⁵⁶ Manuel Castells, *The Rise of the Network Society* (Blackwell, 1996), and *The Power of Identity* (Blackwell, 1997).

⁵⁷ Anthony Giddens, *Runaway World: How Globalization is Reshaping Our World* (Routledge, 2000).

⁵⁸ James Davison Hunter and Joshua Yates, "In the Vanguard of Globalization" in Peter L. Berger and Samuel P. Huntington, *Many Globalizations: Cultural Diversity in the Contemporary World* (Oxford University, 2002).

⁵⁹ Jeffrey K. Hadden, "The Globalization of American Televangelism," in Roland Robertson and William R. Garrett, eds., *Religion and Global Order* (Paragon House, 1991).

⁶⁰ William R. Garrett and Roland Robertson, eds., *Religion and Global Order* (Paragon House, 1991); Peter Beyer, *Religion and Globalization* (Sage, 1994); Susanne Hoeber Rudolph and James Piscatori, eds., *Transnational Religion and Fading States* (Westview, 1997); K.R. Dark, *Religion and International Relations* (St. Martin's, 2000) and John L. Esposito and Michael Watson, *Religion and Global Order* (University of Wales, 2000).

⁶¹ David Held, et al, *Global Transformations: Politics, Economics, and Culture* (Stanford University, 1999); George Ritzer, *The Globalization of Nothing* (Pine Forge Press, 2001); Robert J. Antonio and Alessandro Bonanno, "A New Global Capitalism? From "Americanism and Fordism" to "Americanism-Globalization," *American Studies* 41 (Summer/Fall 2000): 33-77.

⁶² Armand Mattelart, *Mapping World Communication: War, Progress, Culture* (University of Minnesota, 1994); Armand Mattelart, *The Invention of Communication* (University of Minnesota, 1996); and Armand Mattelart, *Networking the World, 1789-2000* (University of Minnesota, 2000).

⁶³ Arjun Appadurai, *Modernity at Large: Cultural Dimensions of Globalization* (University of Minnesota, 1996); Edward Hermann and Robert McChesney, *The Global Media: The New Missionaries of Corporate Capitalism* (Cassell, 1997); Manuel Castells, *The Network Society* (Blackwell, 1996); Anthony Giddens, *The Consequences of Modernity* (Stanford University, 1990) and *Runaway World: How Globalization is Reshaping Our World* (Routledge, 2000); and David Harvey, *The Condition of Postmodernity* (Blackwell, 1989).

⁶⁴ The title of Carey's treatise, published in 1792, was *An Enquiry into the Obligations of Christians to use means for the for the conversions of the Heathens*. Carey sailed for India in 1793, launching a new era in world missions.

⁶⁵ Wilbert Shenk, *Changing Frontiers of Mission* (Orbis, 1999), 154.

⁶⁶ Bruce Lawrence, *Defenders of God: the Fundamentalist Revolt Against the Modern World* (Harper & Row, 1989) and Gilles Kepel, *The Revenge of God: The Resurgence of Islam, Christianity, and Judaism in the Modern World* (Penn State, 1994). Sociologist of religion James Davison Hunter characterizes global religious fundamentalism as defensive resistance to modernity. James Davison Hunter, "Fundamentalism in Its Global Contours" in Norman J. Cohen, ed., *The Fundamentalist Phenomenon: A View from Within; A Response from Without* (Eerdmans, 1990). For extended treatment of fundamentalism, see Martin E. Marty and Scott R. Appleby, eds., *Fundamentalisms Observed* (University of Chicago, 1991), as well as subsequent volumes of the Fundamentalism Project.

⁶⁷ Nancy Ammerman, "North American Protestant Fundamentalism" in Martin E. Marty and R. Scott Appleby, eds., *Fundamentalisms Observed* (University of Chicago, 1991), 5.

⁶⁸ George Marsden, *Understanding Fundamentalism and Evangelicalism* (Eerdmans, 1991), 66.

⁶⁹ Randall Balmer and Lauren F. Winner, *Protestantism in America* (Columbia University, 2002).

⁷⁰ Joel A. Carpenter, *Revive Us Again: The Reawakening of American Fundamentalism* (Oxford University, 1997); Joel Carpenter, "From Fundamentalism to New Evangelical Coalition" in George Marsden, ed., *Evangelicalism in Modern America* (Eerdmans, 1984); and Joel Carpenter, "Fundamentalist Institutions and the Rise of Evangelical Protestantism, 1929-1942" in Larry Eskridge and Mark Noll, eds., *More Money, More Ministry: Money and Evangelicals in Recent North American History* (Eerdmans, 2000).

⁷¹ George Marsden, *Understanding Fundamentalism and Evangelicalism* (Eerdmans, 1991), 73, and *Reforming Fundamentalism: Fuller Seminary and the New Evangelicalism* (Eerdmans, 1987), 3.

⁷² George Marsden, *Understanding Fundamentalism and Evangelicalism* (Eerdmans, 1991), 73.

⁷³ George W. Dolla, *A History of Fundamentalism in America* (Bob Jones University, 1973), 248, cited in Marsden, *Understanding Fundamentalism and Evangelicalism* (Eerdmans, 1991), 106.

⁷⁴ Mark Noll, *The Old Religion in the New World: The History of North American Christianity* (Eerdmans, 2002); Randall Balmer and Lauren F. Winner, *Protestantism in America* (Columbia University, 2002), 28.

⁷⁵ D.G. Hart, *That Old-Time Religion in Modern America: Evangelical Protestantism in Modern America* (Ivan Dee, 2002), 201.

⁷⁶ Timothy Smith, "The Evangelical Kaleidoscope and the Call to Christian Unity," *Christian Scholar's Review* 15 (1986): 125-40.

⁷⁷ Mark A. Noll, *The Rise of Evangelicalism: The Age of Edwards, Whitefield, and the Wesleys* (InterVarsity, 2003), 19.

⁷⁸ Randall Balmer, *Mine Eyes Have Seen the Glory: A Journey into the Evangelical Subculture in America* (Oxford University, 2000), 312-13.

⁷⁹ David W. Bebbington, *Evangelicalism in Modern Britain: A History from the 1730s to the 1980s* (Unwin Hyman, 1989), 1-17.

⁸⁰ Nancy Ammerman, "North American Protestant Fundamentalism" in Martin E. Marty and R. Scott Appleby, eds, *Fundamentalisms Observed* (University of Chicago, 1991), 2. See also, Nancy Tate Ammerman, *Bible Believers: Fundamentalists in the Modern World* (Rutgers, 1987). D.G. Hart argues that the distinction between confessional and pietist (or revivalist) Protestantism comprises the main fault line of American religious history. See D.G. Hart, *The Lost Soul of American Protestantism* (Rowman and Littlefield, 2002).

⁸¹ By 2000, the official *Mission Handbook* characterized all IRBs as "Evangelical" rather than "Fundamental" or "Independent." Interestingly, the *Mission Handbook* listed nearly 400 Evangelical mission agencies in 2000, compared with 31 Fundamental and 36 Independent bodies. Source: John A. Siewert and Dotsey Welliver, eds., *Mission Handbook: U.S. and Canadian Ministries Overseas, 2001-2003* (Evangelism and Missions Information Center, 2000).

⁸² The distinction between "evangelical" and "conservative evangelical" still poses difficulties in the mission field. In Latin America, Pentecostal churches grew rapidly alongside but distinct from "Evangelical" ones. Conservative fundamental broadcasters with HCJB, such as Clarence Jones, consciously distanced their organization from association with the distinct charismatic manifestations (namely, experience of the baptism of the Holy Spirit) associated with Pentecostalism. Because of these problems, usage of the term "conservative evangelical" in the Latin American context specifically excludes the Pentecostal church. To characterize those churches in the mission field that identified themselves as "Evangelical" (as opposed to Pentecostal), the dissertation will employ the capitalized form "Evangelical."

⁸³ David Stoll, David Stoll and Virginia Garrard-Burnett, *Rethinking Protestantism in Latin America* (Temple University, 1993), 16.

⁸⁴ Martin Marty, *Religion and Republic: The American Circumstance* (Beacon Press, 1987), 274.

⁸⁵ James Davison Hunter, *American Evangelicalism: Conservative Religion and the Quandary of Modernity* (Rutgers, 1983).

⁸⁶ For contemporary analysis, see Quentin Schultze, ed., *American Evangelicals and the Mass Media* (Eerdmans, 1990) and "The Mythos of the Electronic Church," *Critical Studies in Mass Communication* 4 (1987): 245-261; and Larry K. Eskridge, "Evangelical Broadcasting: Its Meaning for Evangelicals" in M.L. Bradbury and James B. Gilbert, eds, *Transforming Faith: The Sacred and Secular in Modern American History* (Greenwood, 1989).

For historical treatment, see George Hill, *Airwaves to the Soul: the Influence and Growth of Religious Broadcasting in America* (R & E Publishers, 1983); Dave Berkman, "Long Before Falwell: Early Radio and Religion – As Reported by the Nation's Periodical Press," *Journal of Popular Culture*, 21 (Spring 1988): 1-11; Quentin J. Schultze, "Evangelical Radio and the Rise of the Electronic Church, 1921-1948," *Journal of Broadcasting & Electronic Media* 32 (Summer 1988): 289-303; Joel A. Carpenter, *Revive Us Again: The Reawakening of American Fundamentalism* (Oxford University, 1997); and Tona Hagen, *Redeeming the Dial: Radio, Religion, and Popular Culture in American Popular Culture in America* (University of North Carolina, 2002).

⁸⁷ Leonard Sweet, ed., *Communication and Change in American Religious History* (Eerdmans, 1993).

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- ⁸⁸ George Marsden, "Preachers of Paradox: Fundamentalist Politics in Historical Perspective" in *Understanding Fundamentalism and Evangelicalism* (Eerdmans, 1991).
- ⁸⁹ D.G. Hart, *The Lost Soul of American Protestantism* (Rowman and Littlefield, 2002).
- ⁹⁰ Carpenter, *Revive Us Again: The Reawakening of American Fundamentalism* (Oxford University, 1997), 126.
- ⁹¹ Harry Stout, "Religion, Communication, and the Ideological Origins of the American Revolution," *William and Mary Quarterly*, 34 (1977): 519-41; Nathan O. Hatch, *The Democratization of American Christianity* (Yale University, 1989); Stephen Marini, "Hymnody as History: Early Evangelical Hymns and the Recovery of American Popular Religion," *Church History* 71 (2002): 273-305.
- ⁹² Carpenter, *Revive Us Again: The Reawakening of American Fundamentalism* (Oxford University, 1997), 126.
- ⁹³ George Marsden, *Fundamentalism and American Culture: The Shaping of Twentieth Century Evangelicalism* (Oxford University, 1980), 44-48; Carpenter, *Revive Us Again: The Reawakening of American Fundamentalism* (Oxford University, 1997), 125.
- ⁹⁴ Randall Balmer, *Blessed Assurance: A History of Evangelicalism in America* (Beacon Press, 1999), 56.
- ⁹⁵ Paul Apostolidis, "Scanning the 'Stations of the Cross': Christian Right Radio in Post-Fordist Society" in M. Hilmes and Jason Loviglio, eds., *Radio Reader: Essays in the Cultural History of Radio* (Routledge, 2002), 461.
- ⁹⁶ Paul Apostolidis, "Scanning the 'Stations of the Cross': Christian Right Radio in Post-Fordist Society" in M. Hilmes and Jason Loviglio, eds., *Radio Reader: Essays in the Cultural History of Radio* (Routledge, 2002), 461.
- ⁹⁷ Anonymous, *Call of the Andes*, December 1950, HCJB Archives ("HCJB"), Colorado Springs, CO, 4.
- ⁹⁸ William R. Hutchison, *Errand to the World: American Protestant Thought and Foreign Missions* (University of Chicago, 1987), 1.
- ⁹⁹ Mark Noll, *The Old Religion in the New World: The History of North American Christianity* (Eerdmans, 2002), 2.
- ¹⁰⁰ William R. Hutchison, "Introduction" to *Errand to the World: American Protestant Thought and Foreign Missions* (University of Chicago, 1987).
- ¹⁰¹ Joel A. Carpenter, "Propagating the Faith Once Delivered: The Fundamentalist Missionary Enterprise, 1920-1945" in Joel A. Carpenter and Wilbert R. Shenk, eds., *Earthen Vessels: American Evangelicals and Foreign Missions, 1880-1980* (Eerdmans, 1990), 92.
- ¹⁰² William R. Hutchison, *Errand to the World: American Protestant Thought and Foreign Missions* (University of Chicago, 1987), 177. Joel Carpenter disputes this data, arguing that by the mid-1930s, missionaries affiliated with conservative agencies already made up 40% of the overall missionary force. Joel A. Carpenter, "Appendix: The Evangelical Missionary Force in the 1930s" in Joel A. Carpenter and Wilbert R. Shenk, eds., *Earthen Vessels: American Evangelicals and Foreign Missions, 1880-1980* (Eerdmans, 1990).
- ¹⁰³ On the modern missionary movement, see Andrew Walls, *The Missionary Movement in Christian History* (Orbis, 1996) and *The Cross-Cultural Process in Christian History: Studies in the Transmission and Appropriation of Faith* (Orbis, 2002). On evangelical missions, see Joel Carpenter and Wilbert Shenk, eds., *Earthen Vessels: American Evangelicals and Foreign Missions, 1880-1980* (Eerdmans, 1990).
- ¹⁰⁴ Quoted in Lausanne Committee for World Evangelization, Frances Gray, contr., *Radio in Mission: A Handbook on the Use of Radio in World Evangelization* (Lausanne Committee for World Evangelization, 1989), 7.
- ¹⁰⁵ Joel Carpenter, "Propagating the Faith Once Delivered: The Fundamentalist Missionary Enterprise, 1920-1945" in Joel A. Carpenter and Wilbert R. Shenk, eds., *Earthen Vessels: American Evangelicals and Foreign Missions, 1880-1980* (Eerdmans, 1990), 128-30.
- ¹⁰⁶ Edwin Kayea, "Programming – The Station's View," undated, Testimonies, Audience Survey, Liberia Box 24, SIM International Archives (SIM), Fort Mill, SC.
- ¹⁰⁷ Edwin Kayea, "Programming – The Station's View," undated, Testimonies, Audience Survey, Liberia Box 24, SIM.
- ¹⁰⁸ Andrew Walls, "The American Dimension of the Missionary Movement," in *The Missionary Movement in Christian History: Studies in the Transmission of Faith* (Orbis, 1996), 234. See also, R. Laurence Moore, "American Religion as Cultural Imperialism," in R. Laurence Moore and Maurizio Vaudagna, eds., *The American Century in Europe*, (Cornell University, 2003).
- ¹⁰⁹ William R. Hutchison, *Errand to the World: American Protestant Thought and Foreign Missions* (University of Chicago, 1987), 14, 176

¹¹⁰ Americans represented 33,000 of 46,000 total Protestant world missionaries in 1969. Richard V. Pierard, "Pax Americana and the Evangelical Missionary Advance" in Joel Carpenter and Wilbert Shenk, eds., *Earthen Vessels: American Evangelicals and Foreign Missions, 1880-1980* (Eerdmans, 1990), 158

¹¹¹ Andrew Walls, "The American Dimension of the Missionary Movement," in *The Missionary Movement in Christian History: Studies in the Transmission of Faith* (Orbis, 1996), 234-5

¹¹² Richard Pierard, "Pax Americana and the Evangelical Missionary Advance" in Joel Carpenter and Wilbert Shenk, eds., *Earthen Vessels: American Evangelicals and Foreign Missions, 1880-1980* (Eerdmans, 1990), 179

¹¹³ H. McKennie Goodpasture, *Cross and Sword: An Eyewitness History of Christianity in Latin America* (Orbis, 1989), 271.

¹¹⁴ Lamin Sanneh, "Introduction" to Joel Carpenter and Lamin Sanneh, eds., *The Changing Face of Christianity: Africa, the West, and the World* (Oxford University, 2005), 5; Dana Robert, "Shifting Southward: Global Christianity Since 1945," *International Bulletin of Missionary Research* 24 (April 2000): 50-58.

¹¹⁵ Wilbert Shenk, *Changing Frontiers of Mission* (Orbis, 1999), 154. This figure does not seem to account for large Catholic populations in Latin America in 1800, particularly Brazil. I thank the reader John Tone for this insight.

¹¹⁶ Dana Robert, "Shifting Southward: Global Christianity Since 1945," *International Bulletin of Missionary Research* 24 (April 2000): 50-58.

¹¹⁷ Todd M. Johnson and Sandra S. Kim, "Describing the Worldwide Christian Phenomenon," *International Bulletin of Missionary Research* 29 (April 2005), 81.

¹¹⁸ Dana Robert, "Shifting Southward: Global Christianity Since 1945," *International Bulletin of Missionary Research* 24 (April 2000): 50-58; Joel Carpenter, "Preface" to Joel Carpenter and Lamin Sanneh, eds., *The Changing Face of Christianity: Africa, the West, and the World* (Oxford University, 2005); and Elizabeth Isichei, *The Religious Traditions of Africa: A History* (Praeger, 2004), 171-2. Isichei quotes Andrew Walls, writing as early as the mid-1970s:

"perhaps one of the two or three most important events in the whole of Church history has occurred... a complete change in the center of gravity of Christianity, so that the heartlands of the Church are no longer in Europe, decreasingly in North America, but in Latin America, in certain parts of Asia, and... in Africa."

¹¹⁹ Lamin Sanneh, "Introduction" to Joel Carpenter and Lamin Sanneh, eds., *The Changing Face of Christianity: Africa, the West, and the World* (Oxford University, 2005).

¹²⁰ Joel Carpenter, "Preface" to Joel Carpenter and Lamin Sanneh, eds., *The Changing Face of Christianity: Africa, the West, and the World* (Oxford University, 2005); Andrew Walls, cited in Elizabeth Isichei, *The Religious Traditions of Africa: A History* (Praeger, 2004), 171; and Philip Jenkins, *The Next Christendom: The Coming of Global Christianity* (Oxford University, 2002), 1.

¹²¹ Philip Jenkins, *The Next Christendom: The Coming of Global Christianity* (Oxford University, 2002).

¹²² Philip Jenkins, *The Next Christendom: The Coming of Global Christianity* (Oxford University, 2002), 7.

¹²³ David Martin, *Tongues of Fire: The Explosion of Protestantism in Latin America* (Basil Blackwell, 1990), with a preface by Peter Berger; and David Martin, "The Evangelical Upsurge and Its Policy Implications" in Peter Berger, ed., *The Desecularization of the World: Resurgent Religion and World Politics* (Eerdmans and Ethics and Public Policy Center, 1999), 37.

¹²⁴ Mark A. Noll, *The Rise of Evangelicalism: The Age of Edwards, Whitefield, and the Wesleys, A History of Evangelicalism: People, Movements and Ideas in the English-Speaking World*, Volume 1 (InterVarsity Press, 2003), 22.

¹²⁵ Philip Jenkins, *The Next Christendom: The Coming of Global Christianity* (Oxford University, 2002), 8.

¹²⁶ David Martin, *Tongues of Fire: The Explosion of Protestantism in Latin America* (Basil Blackwell, 1990); David Martin, "The Evangelical Upsurge and Its Policy Implications" in Peter Berger, ed., *The Desecularization of the World: Resurgent Religion and World Politics* (Eerdmans and Ethics and Public Policy Center, 1999).

¹²⁷ Virginia Garrard Burnett, "Protestantism in Latin America" and David Stoll, "Introduction" to David Stoll and Virginia Garrard-Burnett, *Rethinking Protestantism in Latin America* (Temple University, 1993); H. McKennie Goodpasture, *Cross and Sword: An Eyewitness History of Christianity in Latin America* (Orbis, 1989).

¹²⁸ David Stoll, "Introduction" to David Stoll and Virginia Garrard-Burnett, *Rethinking Protestantism in Latin America* (Temple University, 1993).

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- ¹²⁹ David Martin, *Tongues of Fire: The Explosion of Protestantism in Latin America* (Basil Blackwell, 1990).
- ¹³⁰ Andrew Walls, "Africa in Christian History: retrospect and Prospect" in *The Cross-Cultural Process in Christian History: Studies in the Transmission and Appropriation of Faith* (Orbis, 2002), 85.
- ¹³¹ Bengt Sundkler and Christopher Steed, *A History of the Church in Africa* (Cambridge: Cambridge University Press, 2000).
- ¹³² David B. Barrett, Todd M. Johnson, and Peter F. Crossing, "Status of Global Mission, 2005, in Context of 20th and 21st Centuries," *International Bulletin of Missionary Research* 29 (January 2005): 29.
- ¹³³ Elizabeth Isichei, *A History of Christianity in Africa: from Antiquity to the Present* (Eerdmans, 1995), 324.
- ¹³⁴ Dana Robert, "Shifting Southward: Global Christianity Since 1945," *International Bulletin of Missionary Research*, 24 (April 2000), 53.
- ¹³⁵ Lilo Linke, *Ecuador: Country of Contrasts* (Oxford University, 1960), 107.
- ¹³⁶ J. Lloyd Mecham, *Church and State in Latin America: A History of Politico-Ecclesiastical Relations* (University of North Carolina, 1966).
- ¹³⁷ International Congress on World Evangelization, "Status of Christianity Country Profile: Ecuador," Lausanne, Switzerland, July 1974, in File 317, HCJB.
- ¹³⁸ 1974 *Catholic Almanac*, cited in International Congress on World Evangelization, "Status of Christianity Country Profile: Ecuador," Lausanne, Switzerland, July 1974, in File 317, HCJB.
- ¹³⁹ International Congress on World Evangelization, "Status of Christianity Country Profile: Ecuador," Lausanne, Switzerland, July 1974, in File 317, HCJB.
- ¹⁴⁰ Liberian Trading and Development Bank, *Liberia: Basic Data and Information* (Monrovia, 1968), 11.
- ¹⁴¹ Gus Liebenow, *Liberia: Evolution of Privilege* (Cornell, 1969), 96-98.
- ¹⁴² Gus Liebenow, *Liberia: Evolution of Privilege* (Cornell, 1969), 96-98.
- ¹⁴³ Liberian Trading and Development Bank, *Liberia: Basic Data and Information* (Monrovia, 1968) and Gus Liebenow, *Liberia: Evolution of Privilege* (Cornell, 1969).
- ¹⁴⁴ Gus Liebenow, *Liberia: Evolution of Privilege* (Cornell, 1969), 32.
- ¹⁴⁵ John Peter Collett, "The History of Electronics: From Vacuum Tubes to Transistors" in John Krige and Dominique Pestre, eds, *Companion to Science in the Twentieth Century* (Routledge, 2003), 268.
- ¹⁴⁶ John Peter Collett, "The History of Electronics: From Vacuum Tubes to Transistors" in John Krige and Dominique Pestre, eds, *Companion to Science in the Twentieth Century* (Routledge, 2003), 268.
- ¹⁴⁷ Michael Riordan and Lillian Hoddeson, *Crystal Fire: The Invention of the Transistor and the Birth of the Information Age* (Norton, 1997) and Simon Partner, *Assembled in Japan: Electrical Goods and The Making of the Japanese Consumer* (University of California, 1999).
- ¹⁴⁸ Richard N. Langlois and W. Edward Steinmueller, "The Evolution of Competitive Advantage in the Worldwide Semiconductor Industry, 1947-1996" in David C. Mowery and Richard R. Nelson, eds., *Sources of Industrial Leadership: Studies of Seven Industries* (Cambridge University, 1999), 26.
- ¹⁴⁹ Laurence D. Batson, "The Extent of the Development of Radio Over the World," *The Annals of the American Academy of Political and Social Science*, 142 (March 1929): Sup 24-26.
- ¹⁵⁰ United States Information Agency, Office of Research and Intelligence, "World Wide Distribution of Radio Receiver Sets," December 31, 1957, Folder 5, Box 33, Collection 86, BGCA.
- Population estimates are based on a 1962 census figure of 1,016,443 and a projected annual population growth rate of 1.6%, figured by Liberia's Office of National Planning in 1967. Source: "Population of Liberia," Statistical Reports and Correspondence (1955-72), Audience Survey, Liberia Box 24, SIM.
- ¹⁵¹ David Held and Anthony McGrew, eds, *The Global Transformations Reader: An Introduction to the Globalization Debate* (Cambridge, UK: Blackwell, 2000), 351.
- ¹⁵² In 1950, 453 sets existed in North America in 1950 per 1,000 inhabitants.
- ¹⁵³ Frank Gray and Eila Murphy, "The Unlikely Missionary," *Mission Frontiers: The Bulletin for the U.S. Center for World Missions* 22:6, December 2000, available at www.missionfrontiers.org.
- ¹⁵⁴ David Held and Anthony McGrew, eds, *The Global Transformations Reader: An Introduction to the Globalization Debate* (Cambridge, UK: Blackwell, 2000), 351.
- ¹⁵⁵ United States Information Agency, Office of Research and Intelligence, "World Wide Distribution of Radio Receiver Sets," December 31, 1957, Folder 5, Box 33, Collection 86, BGCA.

¹⁵⁶ A.N. Maclin, "The Listening Continent: A Survey of Broadcasting in Africa," *The Christian Broadcaster: Journal of the World Association of Christian Broadcasters* 11 (December 1964): 9-12.

¹⁵⁷ Sundkler and Steed, *A History of the Church in Africa* (Cambridge University, 2000), 901.

¹⁵⁸ A.N. Maclin, "The Listening Continent: A Survey of Broadcasting in Africa," *The Christian Broadcaster: Journal of the World Association of Christian Broadcasters* 11 (December 1964), 9.

¹⁵⁹ Edwin Kayea, "Programming – The Station's View," undated, Testimonies, Audience Survey, Liberia Box 24, SIM, 4.

¹⁶⁰ A.N. Machlin, "The Listening Continent: A Survey of Broadcasting in Africa," *The Christian Broadcaster: Journal of the World Association of Christian Broadcasters* 11 (December 1964), 9.

¹⁶¹ Clarence Jones, "World Survey of Missionary Radio," Report of the Third World Conference on Missionary Radio, June 12-15, 1961, Folder 16, Box 34, Collection 86, BGCA.

¹⁶² Peter Berger, "A Sociological View of the Secularization of Theology," *Journal of the Scientific Study of Religion* 8 (1967): 11-12; Peter Berger, "From the Crisis of Religion to the Crisis of Secularity" in Mary Douglas and Steven Tipton, eds., *Religion and America: Spiritual Life in a Secular Age* (Beacon, 1983) Peter Berger, "Secularization and De-secularization" in Linda Woodhead, ed., *Religions in the Modern World: Traditions and Transformations* (Routledge, 2002); Steve Bruce and Roy Wallis, "Secularization : Trends, Data, and Theory" in Monty L. Lynn and David O. Moberg, *Research in the Social Scientific Study of Religion: A Research Annual*, Vol. 3, (JAI, 1991); Steve Bruce, ed., *Religion and Modernization: Sociologists and Historians Debate the Secularization Thesis* (Oxford University, 1992); *God is Dead: Secularization in the West* (Blackwell, 2002); Tona Hagen, "Introduction" to *Redeeming the Dial: Radio, Religion, and Popular Culture in American Popular Culture in America* (University of North Carolina, 2002); Joel Carpenter, "Conclusion" in *Revive Us Again: The Reawakening of American Fundamentalism* (Oxford University, 1997); James Davison Hunter, *American Evangelicalism: Conservative Religion and the Quandary of Modernity* (Rutgers, 1983); M.L. Bradbury and James B. Gilbert, eds, *Transforming Faith: The Sacred and Secular in Modern American History* (Greenwood, 1989); Philip Jenkins, *The Next Christendom: The Coming of Global Christianity* (Oxford University, 2002).

¹⁶³ Stuart Hall, et al., eds., *Culture, Media, Language* (Hutchinson, 1980).

Part I

Station HCJB (1931-59)

Part I traces the development of Station HCJB from its origin in 1931 as the “Pioneer Missionary Broadcaster” through the dramatic expansion of missionary broadcasting which followed WWII, focusing particularly on the creative contributions of the station and its founder Clarence Jones in the area of radio reception. Part I is divided into two sections. Chapters 2 and 3 focus on the station’s early history, tracing the origins of the station to the “radio revivalism” of Chicago evangelist Paul Rader during the 1920s and narrating in detail the establishment of the station and its “Radio Circle” receiver program against considerable adversity at the height of the Great Depression. As the “father” of missionary broadcasting, Clarence Jones provides the link between HCJB’s early activities and missionary radio’s first major global expansion during the post-WWII period, covered in second half of Part I. Chapters 4 and 5 detail the attempts by missionary stations and radio amateurs to supply radios for use in the field during missionary radio’s first truly “global era.”

Two common themes run through Part I. Broadcasters with HCJB developed a range of approaches to the problems of radio reception in Ecuador, demonstrating their creativity and innovativeness. These included Jones’ original vision of the Radio Circle as a listening community that took advantage of national Christians, Jones’ proposal for a missionary receiver for the poor masses in 1944, and the reorganization of the Radio Circle in 1949 under Marion Krekler as a small-scale workshop for the custom production of radios distributed in the Ecuadoran countryside. Secondly, as this array of

receiving solutions demonstrated, officials and workers with HCJB's Radio Circle believed adamantly that radio performed a unique function in the mission field by penetrating barriers, reaching Ecuadorans in their homes, and reducing religious prejudice against the conservative evangelical gospel.

Chapter 2

Pioneering Missionary Radio, 1931-45

Introduction:

When it opened on Christmas Day 1931 from Quito, Ecuador, with a mere 250 watts, Station HCJB represented several firsts in the field of international broadcasting. It was the first American radio station operated continually outside the territorial United States. While Catholic Radio Vatican was the first full-time religious radio station, established in February 1931, HCJB was the first Protestant, first evangelical, and first specifically missionary station overseas, still in operation today. For the first time in the 2,000-year history of the Christian church, missionaries communicated the gospel cross-culturally through electronic means rather than through face-to-face contact or the printed word. Members of the Plymouth Brethren, a Protestant sect, in Great Britain had operated a religious station in Iceland from 1925 to 1929, importing a custom-built transmitter, but since the station only broadcast Sunday meetings to its own assembly halls, it arguably did not comprise a truly “missionary” station.¹ While missionaries had broadcast messages intermittently on local stations in Argentina and Uruguay since 1928, and in the Dominican Republic since 1930, HCJB was the first full-time missionary station in Latin America owned and operated by North American evangelicals.²

For the next seventeen years, HCJB would remain the only evangelical missionary station in the world. HCJB’s survival and expansion over this period, accompanied by its steady response from listeners, demonstrated the viability and value of missionary radio and led to its adoption as a model by evangelical missionaries during a post-WWII expansion in missionary broadcasting, first in Latin America and then in the

rest of the globe. In 1940, HCJB accepted its first sponsored program, the popular American show *Old-Fashioned Revival Hour* produced by evangelist Charles Fuller. The success of the arrangement led to its widespread adoption by evangelical broadcasters in the United States and missionary stations after WWII and the spread of American evangelical programming world-wide. It is no coincidence that those areas of the world which witnessed dramatic growth in evangelical Protestantism after 1960 acquired strong evangelical radio voices – HCJB in Latin America (1931), Far East Broadcasting in Asia and the South Pacific (1948), and Station ELWA in sub-Saharan Africa (1954).

The construction of missionary radio stations involved not merely the export of religious programs, but of a complex set of technical practices and cultural meanings. James Schwoch has demonstrated how the American radio industry in its first decade exported not only radio equipment (transmitters and receiving sets) to Latin America, but a “modern American culture of consumption” as well.³ This chapter will show how the particular historic roots of American missionary radio lay in the experience of radio revivalism in the Midwest during the late 1920s and how the pioneering practices of Station HCJB shipped many of the ideas, values, and principles derived from this experience overseas. Since HCJB’s experience became normative after WWII, establishing the precedents for American missionary broadcasting becomes important for delineating an entire field.

In delineating the origins of missionary radio through analysis of the historical experience of Station HCJB, this chapter addresses three broad types of questions. First, as the self-styled “Pioneer Missionary Broadcaster,” in what ways did HCJB pioneer or innovate? Second, as the first Protestant missionary broadcast station in the world, what

types of standards or norms did HCJB set for the post-WWII field of missionary broadcasting? Third, how did HCJB's efforts involve the establishment of an American broadcasting culture and the export of specifically American values in religious enterprise?

HCJB pioneered in numerous specific areas, largely inventing the field of missionary radio. HCJB developed numerous innovations in religious broadcasting: the adoption of techniques of "radio revivalism" (i.e., the use of radio for personalized evangelism); utilization of "faith missions" as the dominant organizational form for the missionary radio effort; financing through voluntary donations from grass-roots American supporters; recruitment of missionary volunteers as station personnel and technical staff; employment and training of nationals; a stance of deliberate political neutrality in programming that resulted in favorable government relations; a blueprint for radio missionary evangelism that emphasized progressive development of local, national, regional, and international markets; promotion of programming produced and sponsored by American broadcasters; and the active distribution of receiver technology to augment audiences and capture listeners. The pioneering work of Clarence Jones and his colleagues at HCJB to communicate the gospel in the foreign field demonstrated the entrepreneurial spirit at the heart of modern American evangelicalism. It also dramatizes numerous traits not popularly associated with conservative religious organizations, including organizational command, networking skill, flair for publicity and self-promotion, pragmatic resourcefulness, mastery of technology, flexibility and adaptability to a commercial environment.

This study will contribute to revising overly simplistic typecasting of religious fundamentalists. Scholars and the general public have frequently depicted religious fundamentalism as a defensive reaction against modern life and a retreat from its social and cultural norms.⁴ In this common view, fundamentalism represents “a kind of revolt against the secular hegemony of the modern world.”⁵ Following the rise of televangelism and the Moral Majority in the 1970s, scholars from a variety of disciplines took note of the extensive use of broadcast media by conservative Christian groups in the United States.⁶ Scholarship tended to play up the reactionary nature of conservative evangelical broadcasting, detailing how fundamentalists used radio and television media to separate themselves from the influences of contemporary American society and to advance a right-wing social and political agenda.

Scholars have yet to trace fully the historical roots and transnational flow of American televangelism.⁷ The missionary imperative, the mandate to evangelize the world, made up not a peripheral belief, but a core tenet that shaped the character and identity of modern American evangelicalism. Analyzing the historic growth of American missionary radio broadcasting in a foreign environment makes clearer the pragmatic and entrepreneurial spirit which lay at the heart of modern American evangelical communication. To construct a broadcast station in a developing country during the Great Depression required considerable entrepreneurial vision, organizational skill, and pragmatic resourcefulness. Rather than the social, political, and theological conservatism of fundamentalists, this chapter will highlight an equally important facet of American evangelicalism - its technological creativity. A focus on technology in the mission field allows us to see that, out of their concern to spread the gospel, American evangelicals

abroad frequently acted in innovative or pioneering capacities, aligning themselves at least rhetorically with modernizing forces in the less developed world when it suited their interest. Pragmatic fundamentalists like Clarence Jones conjoined their fixed belief system with constantly changing means of communication in order to get their message out and convert the world, thereby making simplistic characterizations of conservative evangelical Protestants as cultural reactionaries more difficult to maintain.

The Origins of HCJB, 1922-29

The immediate roots of missionary broadcasting lay in American radio revivalism of the 1920s. Religious groups took to the American airwaves at the dawn of the broadcasting era. Station KDKA broadcast the first regular church service from Calvary Episcopal Church in Pittsburgh on January 2, 1921, only two months after Westinghouse engineer Frank Conrad conducted radio's inaugural broadcast on November 2.⁸ In 1923, the Federal Council of Churches in Christ (FCCC), representing 25 mostly liberal mainline Protestant denominations, began encouraging local church councils to developing community radio programs. In May 1923, the New York branch of the FCCC responded by launching the *National Radio Pulpit* over Station WEAJ (later WNBC) in New York City. By 1925, churches, church denominations, and religious bodies operated 63 stations across the country, over 10% of the nation's total.⁹

As the 1920s progressed, a series of events indelibly stamped the character of American religious radio broadcasting. Following complaints of station interference caused by the cacophony of voices on the air, Secretary of Commerce Herbert Hoover summoned a series of conferences in Washington, D.C., culminating in the Radio Act of

1927. The first major piece of federal legislation to oversee the new field of broadcasting, the Radio Act established basic, long-term regulatory yardsticks, allocating the frequency spectrum in favor of large, high-powered “clear channel” stations with broad (vs sectarian) religious programming which regulators deemed in the “public interest.” In 1926, the National Broadcasting Company (NBC) established the country’s first national network. NBC quickly made two momentous decisions. First, it decided to donate, rather than sell air-time to representatives of the three major religious faiths. Second, it designated the FCCC as the sole source of Protestant programming for the network in order to streamline relations with separate denominations and enhance control over religious programs.¹⁰

NBC and the FCCC enjoyed a cozy relationship, facilitated by the proximity of their organizations’ New York City offices. Charles S. McFarland, general secretary of the FCCC and a member of the FCCC’s National Religious Radio Committee, also chaired NBC’s Religious Advisory Council. Early FCCC programs for NBC relied almost exclusively on traditional preaching and teaching formats; they lacked entertainment, such as music or drama, as well as special features, such as news and children’s programming. In the fall of 1928, NBC featured *National Radio Pulpit* as the centerpiece of its religious slate, taking the program nation-wide. The first religious program produced in a studio (instead of live) and a staple program for the network for decades, *National Radio Pulpit* featured prominent liberal Protestant preachers in New York City, such as Harry Emerson Fosdick and Dr. S. Parkes Cadman. In 1934, NBC and FCCC institutionalized their relationship when the FCCC created a National Religious Radio department exclusively to handle all of NBC’s Protestant religious programming.

The consolidation of the radio broadcasting field into a regulated and centrally controlled commercial industry by 1930 had significant, long-term consequences for the use of radio by religious groups. By 1933, the number of independent religious stations had dwindled to thirty.¹¹ Excluded from NBC broadcasts, local religious broadcasters and non-FCCC denominations had little choice but to purchase air-time initially from non-affiliated stations and later from rival networks CBS (1927), Mutual Broadcasting (1934), and ABC (1945).¹² The alliance between organized denominational Protestantism and radio's dominant network prompted an ironic alignment between conservative evangelical Protestant and commercial forces in the field of broadcasting that would prove enduring and would eventually carry over into the foreign mission field.

Fundamentalist groups quickly seized upon the opportunities afforded by commercial radio in the late 1920s. The mass urban revivals popularized by Dwight Moody and Billy Sunday were no longer viable in America's big cities by 1930. The influx of non-Protestant immigrants, new forms of mass entertainment and travel (cinema, sports, automobiles), and the controversy with modernists reduced audiences and enthusiasm among fundamentalists for city-wide evangelistic campaigns.¹³ At the dawn of the Radio Age, conservative evangelicals embraced new forms of popular culture to stir the flames of religious revival. Paul Rader (1878-1938), a former cowboy, boxer, college football coach, and Wall Street speculator turned revivalist preacher, pioneered the genre of radio revivalism in Chicago during the 1920s. Following his conversion in 1912, Rader enjoyed a meteoric rise within the fundamentalist movement, serving briefly at the helm of two key fundamentalist institutions - Moody Church (1915-21) and the Christian & Missionary Alliance (1921-24?) as the movement reached the

zenith of its cultural influence.¹⁴ After leaving Moody Church, Rader founded the Chicago Gospel Tabernacle in 1922 to promote continuous revival among evangelicals in the Chicago area. With no membership roll, the Tabernacle represented an “independent evangelistic outreach center” rather than an official church or denomination. Rader designed the Tabernacle’s fare to supplement evangelical life in Chicago, scheduling afternoon services and inviting renowned fundamentalist pastors and evangelists as speakers. Along with Rader’s spirited preaching and the celebratory style of service, music formed a central feature of Tabernacle revivalism. In the words of one scholar, Rader’s “real knack was for music.”¹⁵ Rader invited the leading gospel musicians in Chicago to play in his orchestra and brass band, complementing the Tabernacle’s 200-voice choir. Rader’s *Tabernacle Hymns*, published by his own Tabernacle Publishing Company, became a widely popular songbook used by evangelicals nation-wide.

Rader’s radio career chronicled the rise of electronic revivalism as a vibrant form of religious expression. Rader viewed radio as a “new witnessing medium” that would extend his revival ministry.¹⁶ Rader first experimented briefly with radio in 1922. At the invitation of the mayor of Chicago, William H. Thomson, who operated an early station, WBU, the evangelist arranged for the Tabernacle’s brass band to play live from the roof of city hall to promote an upcoming revival meeting. From 1925 to 1927, Rader purchased fourteen hours of air-time on Sundays from Thompson’s successor station, WHT. In addition to broadcasting two services live, Rader’s musical staff prepared a range of studio programs that were innovative for their day, including *National Radio Chapel*, one of the first national fundamentalist programs to run nationally (which could be heard as far away as the East Coast and Canada), the *Shepherd Hour*, designed for

young people, and *Request Hour*, which played listener requests. Rader appreciated the importance of both entertainment and devotion on radio; Rader and his staff developed a successful mixed program format on several shows that combined music, ranging from simple organ accompaniment to full orchestra and choir, with gospel preaching and storytelling. Following the FCC's reassignment of WHT's frequency to a lower wavelength in 1927, Rader lost part of his audience and Sunday hours. From 1927 to 1930, Rader leased facilities on Sunday from the owner of Station WBBM, a powerful 25,000 watt superstation and CBS affiliate, under the separate call letters WJBT ("Where Jesus Blesses Thousands"). Ear-marked for members of the livestock and farming industry, Rader used the station's broadcasts into the American farm heartland to inaugurate a new mission strategy, adopting a more intimate style of delivery and abandoning the "bigger-is-better" revival model for a series of home bible study groups under the auspices of a new organization, the World Wide Christian Couriers.¹⁷ Rader and his musical staff also launched an ambitious morning program, the *Breakfast Brigade*, consisting of short sermons and gospel songs played on organ. In April 1930, the radio revivalist succeeded in taking *Breakfast Brigade* across the country for a brief period, purchasing time over CBS in ten Eastern and Midwestern cities. The onset of the Depression, however, revealed the Achilles' heel of "self-sustaining commercial radio evangelism," which relied on a steady flow of voluntary donations.¹⁸ Faced with shortage of funds, Rader could not maintain national broadcasts and was forced in August 1930 to retrench, relying over the following three years on a patchwork of programs on air-time purchased over several local Chicago stations.¹⁹

Although the evidence seems to indicate that fundamental broadcasts such as Rader's attracted few unconverted listeners, radio performed important functions within the fundamentalist camp during its first two decades.²⁰ First, after the disaster of the Scopes Trial, radio nurtured the cohesion of fundamentalism as an interpretive community, cementing the movement's oppositional identity and ensuring its long-term viability as a subculture. Along with Bible colleges and institutes, prophecy conferences, and magazine publications, radio helped to cement evangelicalism as a network of parachurch institutions that operated outside of traditional denominational structures. Radio enabled fundamentalist preachers keep in touch with their constituents, reinforcing a sense that a larger "invisible community" existed and that it was alive and well.

Like radio, the foreign mission enterprise provided a unifying force for American evangelicals during the first half of the twentieth century. By providing a common sense of purpose as well as exemplars and role models of dedicated action, evangelical missions provided the "glue" that held the religious movement together.²¹ While graduates of Bible colleges and institutes provided the rank-and-file of the conservative missionary movement, evangelical magazines and broadcasts publicized their news and financial needs. The unconverted masses, at home and especially abroad, provided the essential "other" against which evangelicals defined themselves as a redeemed people. The task of converting the unsaved provided evangelicalism with its central preoccupation. Rader considered missionary vision the "greatest of all Christian enterprises."²² In the typical view of one fundamental organization, commitment to global missions acted as a litmus test of evangelical orthodoxy: "The one task of true

Christians everywhere is World Evangelization. This is a big World, and Christ died for it – *all of it.*”²³ [emphasis in original]

The contribution of evangelicals to the larger cause of Protestant missions demonstrated evangelicals’ distinctiveness and innovation. In the second half of the nineteenth century, evangelicals set up a series of independent “faith missions” to conduct their missionary work, including the China Inland Mission (1865), the Christian & Missionary Alliance (1887), and the Sudan Interior Mission (1893). The C&MA grew out of the soul-winning work of Rev. A.B. Simpson, a Presbyterian minister in New York City who, like Rader, left the church to conduct his own evangelistic campaigns. Like other evangelical faith missions, Simpson’s movement emphasized Biblical inerrancy, separation from the world, practical holiness, and premillennialism (that is, the premillennial return of Jesus Christ). Organized outside any church or denomination, workers with faith-based missions like the C&MA did not have regular salaries. Lacking regular supporters, such agencies relied on general appeals to the greater conservative Christian public for their income.²⁴ Evangelical “faith missions” demonstrated remarkable staying power, resilience, and creativity over the twentieth century. They grew steadily, developing specialized ministries in areas such as Bible translation, aviation, sound recordings, correspondence and extension courses, and radio broadcasting.²⁵ By the 1930s, these faith missions became increasingly popular outlets for conservative Protestants disillusioned with the mission boards of the major denominations, which dominated the American missionary enterprise by the second decade of the twentieth century.²⁶ Between 1930 and 1980, conservative evangelicals

fueled a revitalization of the Protestant missionary movement, more than doubling the number of Protestant missionaries in the field with their members.²⁷

In pioneering Station HCJB, Clarence Jones, a protégé of Paul Rader, brought together these two important strands in the conservative evangelical movement of radio revivalism and foreign missions. Jones clearly understood the significance of broadcasting in terms of its value to missionary work: “I believe that radio has been given to us by the Lord for the Church of the twentieth century, in the completion of the missionary challenge in commission to the church.”²⁸ Radio revivalism in the Midwest acted as the forge from which American missionary radio emerged. Jones’s involvement with the Tabernacle’s brass band from 1922 to 1930 and as Rader’s radio director from 1925 to 1930 provided him the experience and, more importantly, the credibility to launch a foreign missionary station in the eyes of domestic financial supporters and foreign governments. The success of radio in the mission field, the “regions beyond,” rested upon and presumed its prior establishment in the “homeland.”

Clarence Jones’s involvement with music in his early life linked his religious and radio experience. Born in Chicago in 1900 to a Salvation Army commander, Jones taught himself the trombone at a young age and played in a Salvation Army band for 6 years. In 1918, a member of Paul Rader’s orchestra invited Jones to join the ensemble at Moody Church. While playing in a service on October 27, 1918, Rader’s preaching resulted in Jones’s youthful conversion. Following his conversion, Jones’s family joined Rader’s church, where Clarence continued to play in Rader’s band. Jones dropped out of high school and enrolled in Moody Bible Institute (in those days a non-accredited alternative), graduating in 1921 as president of his class. Upon graduation, Jones went into full-time

evangelistic work as a song leader with R.E. Neighbor, an itinerant evangelist, traveling into mining camps in West Virginia and Pennsylvania. Returning to the Chicago area in 1922, Jones joined a brass quartet in Rader's newly formed Chicago Gospel Tabernacle, where he performed in Rader's first radio broadcast atop city hall. In addition to musical talent, Jones demonstrated an early organizational flair in his responsibilities with the Tabernacle. Jones oversaw the organization's youth work, designing a new program called AWANA (Approved Workmen are Not Ashamed), which he modeled after the Boy Scouts and which is in widespread use still today among conservative Protestant churches. Beginning in 1924, Jones also taught biblical geography in the Christian day school run by the Tabernacle. Jones also directed Rader's campground facility in Lake Harbor, Michigan, used as a religious retreat and conference center by the Chicago evangelical community.

Jones quickly took over the day-to-day operations of Rader's radio work. When Rader began regular Sunday broadcasts in 1925 over WHT, he tabbed Jones as the Chicago Gospel Tabernacle's radio program director.²⁹ Jones directed a radio staff of 19 personnel, composed largely of accomplished gospel musicians in the Tabernacle, such as Lance Latham, Merrill Dunlop, Richard Oliver, Jr., and Jones's brother Howard. Together, the ensemble produced 14 hours of programming on Sundays, much of it live. In the early, pioneering days of radio, formal broadcast training did not exist. Jones therefore learned his trade on the job. Jones later considered his years of trial-by-error experience a "great training ground."³⁰ By emphasizing improvisation, it provided valuable preparation for the experimental, make-shift environment of the mission field,

where the difficulty of obtaining technical supplies and the lack of program material made ingenuity and resourcefulness a necessity.

Rader proved a critical influence on the young Jones. Jones considered Rader his “spiritual father,” whose preaching had led to his original conversion.³¹ Rader’s fiery temperament, spiritual enthusiasm, and expansive optimism found their match in Jones’s own sunny disposition and aggressive, opportunistic outlook. Rader had decided to leave Moody Church in 1921 in order to undertake independent evangelistic work, which ranged from itinerant preaching and the establishment of the Tabernacle (which had no regular membership) to the purchase of air-time on commercial radio stations. Rader’s success suggested to Jones the potential of specialized, “faith-based” ministries without formal or regular institutional support. By observing Rader daily over twelve years, Jones considered that he had learned to “trust the Lord and go ahead, regardless of circumstances.”³² Rader’s pragmatic approach to revival, his appreciation for the role of music, and his penchant for publicity and self-promotion all echoed in the fervor for evangelistic endeavor of the young protégé.

Rader provided the bridge between radio revivalism at home and its use in foreign missions. Jones credited Rader with the decision to enter the mission field: “Your spiritual fervor and vision has been fused into us by the Spirit, causing us to come out here...” to the mission field.³³ Jones’s idea of employing radio in missionary work, which was a fairly progressive concept in the late 1920s among conservative evangelicals, came directly from Rader’s example. “There weren’t too many people like Mr. Rader,” Jones later maintained, “who were believing... first in radio and in radio overseas on the mission field.”³⁴ Rader enthusiastically embraced the use of radio for missions because

he believed it would hasten world evangelization by presenting a regular, fairly instant gospel message around the globe. Thanks to radio, Rader believed, it had “never been as easy to evangelize the world as it is today.” Radio presented the unprecedented opportunity to speak to “thousands, nay, millions” and “to reach every creature quickly and continuously in a missionary endeavor.”³⁵ Jones utilized the cover of Rader’s national reputation and missionary organization, the World Wide Christian Couriers (WCCC), to launch his pioneer missionary venture.

Jones’s formal missionary career began in 1927. While attending a missionary conference at Rader’s campground in Lake Harbour, Michigan, Jones felt the spiritual call to embark on a missionary radio career: “Will you go? Will you go south by radio?” Jones made immediate plans to explore the possibility of establishing a “sister South American station” to Rader’s WJBT in Chicago, operating under the auspices of Rader’s Couriers.³⁶ South America proved an interesting choice of location for the young missionary. Despite its close proximity, South America lacked prestige with conservative evangelicals as a missionary site. Partly a result of its Catholic heritage, the neighbor to the south had been the last continent to receive Protestant missionaries from North America and Europe. At the epochal World Missionary Conference, held in Edinburgh in 1910, Latin America was not even represented among the assembly’s 1,200 delegates.

Jones took his first trip to South American in the spring of 1928 to prospect for a radio station. From February to May, 1928, Jones traveled on board an ocean liner with his brother-in-law, Chet Churchill, to search for a favorable station location. Choosing to explore the east coast of the continent because of its higher population density and greater development of radio facilities, Jones approached the governments of Venezuela,

Colombia, Panama, and Cuba with a proposal to install a “non-commercial, non-political radio station with educational, cultural, and religious programming.”³⁷ To Jones’s surprise, he found the door emphatically closed to him in all four countries. Jones felt that officials greeted the North American with suspicion as a “gringo” and “hated heretic,” fearing that a foreign station might incite popular opposition to regimes in power.³⁸

In order to pioneer in the mission field, Clarence Jones forged novel institutional arrangements. Initially unable to obtain a government permit, Jones returned to Chicago in the summer of 1928. Attendees at the Tabernacle favored Jones’s idea, but had limited funds with which to support it. Seeking to “crawl under the wing of existing societies,” Jones approached several mission boards over the next two years in search of money, including AIM and the Toronto Gospel Tabernacle.³⁹ Generally, missionary secretaries remained skeptical of Jones’s untried methods. While purporting to have enthusiasm for his novel ideas, they suggested Jones undertake the effort alone.⁴⁰ Unable to recruit formal support from fundamentalist mission societies, Jones chose to “go it alone.” Eventually establishing his own faith mission in April 1931, Jones set out an important precedent that became a pattern for future missionary stations. Like Jones, missionary broadcasters would elect to create their own independent broadcasting organization rather than operate under the arm of existing mission societies, choosing to rely for financial support on voluntary contributions received directly from donors.

In one important area, however, Jones proved an exception to this rule of organizational autonomy – the procurement of a government license. Here too, as we shall see, Jones led the way by developing a new form of collaboration with local missionaries and their North American board.

Obtaining a Government License, Fall 1929 - November 1930

Jones procured a government license in South America through extensive interaction with C&MA missionaries, which resulted from a series of coincidental encounters. After returning to Chicago in 1928, Jones graduated from high school and completed a year of study at Northwestern University. In Chicago, he encountered a former teaching colleague from the Tabernacle day school, Ruth Miller. Miller had since married a missionary with the C&MA in Ecuador, John Clark, and was now on a year-long furlough in the Chicago area. Upon meeting, Miller suggested Jones consider Ecuador on the west coast of South America as a site for his station - a country which Jones confessed he had never heard of, much less considered.⁴¹ At Clark's suggestion, Jones invited Reuben Larson, an accomplished C&MA missionary in Ecuador also on furlough in the Midwest, to come speak at a Tabernacle missionary conference in the fall of 1929. Upon meeting for the first time, Jones and Larson spoke late into the night, sharing their common enthusiasm for radio evangelism and laying the foundation for a life-long partnership in missionary broadcasting. Listening to Larson's description of the country, Jones allegedly "fell in love" with Ecuador. The two made immediate joint plans to launch a station there under the joint auspices of the C&MA and WWCC.⁴² Under their mutual arrangement, Jones would provide the equipment and financial support in the United States, while Larson would work on the ground in Ecuador to obtain government approval. Larson invited Jones to visit the country in August the following year, ostensibly to lead the singing at a C&MA missionary conference to be held in Quito in October 1930, but more importantly to survey for a station over several months.

On first sight, Ecuador represented an extremely unlikely site for an American missionary evangelical radio station. Commercial broadcasting began in Latin America in 1923 largely as a product of the expansion of the American radio industry.⁴³ As a result of American influence, the development of radio in Latin America followed largely the American model of broadcasting, including private ownership of stations, limited government regulation (limited to allocation of the frequency spectrum), national chain networks, extensive use of advertising, and American-style programming, consisting of music, entertainment, and news. American stations, such as Pittsburgh's KDKA, remained popular on the shortwaves throughout the 1920s. While some local radio factories existed in Brazil, Mexico, Argentina, and Uruguay, these often merely assembled imported parts; listeners strongly preferred American-made sets and most receivers were imported from the United States. By 1928, Ecuador and Colombia remained the only two countries in Latin America without a radio station.⁴⁴ By 1931, Ecuador lacked transmitting stations, receiving facilities, and even radio laws. Only a handful of amateur hams operated on short-wave frequencies in the country, communicating largely among themselves.⁴⁵

In addition to lacking radio facilities, Ecuador was a staunchly Catholic country. Religion played an important role in the history of modern Ecuador – but the wrong kind of religion for evangelicals. Beginning with Francisco Pizarro's conquest of the region in 1526, Ecuador had become a Catholic stronghold. Quito, the oldest capital in the New World, Quito enjoyed its first mass in 1534. With its numerous churches, chapels, and convents, the city became renowned by the early seventeenth century for its piety. In 1830, Simon Bolivar characterized the country in 1830 as a “convent.”⁴⁶ Closely allied

with the state, the Catholic Church prospered during the colonial and early nationalist periods, enjoying considerable wealth, power, and prestige.

Like Roman Catholicism, the history of Protestant missions in Ecuador was closely tied to political developments in the country. Significantly, the arrival of conservative North American Protestants in the country coincided with the rise of militant Liberals in the republic, who favored freedom of religious choice. Following the Liberal Revolution of 1895, which brought General Eloy Alfaro to power, Ecuadorans enjoyed a constitutionally protected freedom of religion for the first time in their history. Eager to enlist support for his revolutionary agenda in his battle with Conservatives and with the Catholic Church, Alfaro allowed the first North American missionaries into Ecuador in 1899 – the last country in South America to do so.⁴⁷ Ironically, secular forces committed to economic and political liberalization thus allied themselves for strategic purposes with foreign missionary elements committed to their own particular, conservative religious agenda, albeit of a different stripe.

The first three decades of Protestant activity in Ecuador witnessed slow progress. Missionaries of the C&MA and the Gospel Missionary Union, the two dominant groups who were the first to arrive in the country, remained confined to the coastal area and the port city of Guayaquil, establishing initial mission stations inland on the Sierra (central highlands) and in the Oriente (eastern jungle). In 1922, the CMA built a church in Quito, the first Protestant building in the capital city. By 1931, the year HCJB started broadcasts, faithful Protestant missionaries could claim meager results: a mere 25-30 baptized believers, a number roughly equal to the total mission staff in the country. What Goffen terms the “second religious conquest” of Ecuador began through modest means: a

series of small-scale, personalized methods of evangelization, including “colportage (tract distribution), home visitation, open air services, and shepherding small congregations.”⁴⁸ Evangelical missionaries faced significant opposition in the interior of the staunchly Catholic country, including hostile mobs, and demonstrated significant “perseverance in the face of great hardship.”⁴⁹

Reuben Larson, a second-generation C&MA missionary, provided Clarence Jones with his entrée into Ecuador. After attending the C&MA’s Missionary Training Institute in Nyack, New York, Larson had arrived in Ecuador in 1924. In 1926, Larson opened a frontier station at Dos Rios near Tena in the Northern Oriente jungle, along with fellow C&MA missionary D.S. Clark. Larson demonstrated a high degree of resourcefulness in expanding outlets conduits for the gospel message, developing commercial opportunities, and improving living prospects among the Quechua Indians. Jones built a mission school, dispensary, chapel, and trading post at Dos Rios, which Indians traveled as much as eight days to frequent. Under Larson’s oversight, Indians built their first church building, where the American baptized the “first jungle Indian believers.” Larson arranged to cut a coffee plantation out of the jungle, consisting of 17,000 coffee trees, which he later turned to pasture. Larson undertook to improve social conditions among the Indian population. In addition to reforming the practice of peonage among the Quechea, Larson’s was able to raise the extremely low wages paid to Indian workers, as well as the price of produce grown by the Indians. Following a series of official contacts, Larson became an important government agent in the Oriente region. As school, mail, and road inspector for the remote jungle area, Larson produced impressive results, building new school houses, and conducting periodic examinations in schools (including Catholic),

doubling the mail service, and adding new roads, while returning extra funds to the state treasury. A measure of the significant trust he earned as a result of his actions, the government awarded Larson the salt and match monopoly in the region.

Dissatisfied with the limited reach of his efforts compared with the magnitude of the unreached “harvest fields,” Larson had seized independently upon radio broadcasting as a way to widen his evangelistic ministry. When Larson met Jones in Chicago in the fall of 1929, he had already started efforts to organize a missionary radio station; Larson had contacted several people, typed up letterhead, and appointed a technician.⁵⁰ Sensing that Jones’s project was further along, and seeing Rader’s support, Larson opted to back Jones’s radio effort in lieu of his own.

Larson’s support for Jones’s radio project enabled it to get off the ground in South America. Several months after their first meeting in Chicago, Jones and Larson traveled to New York City where they met with the Consul General of Ecuador on April 11, 1930. The following day, Jones and Larson presented the diplomat with a proposal addressed to the country’s president for a pioneer missionary radio station. Maximizing their institutional leverage, Jones and Larson depicted their venture as the combined effort of Rader’s WWCC and the C&MA, whose organizations desired to “join forces” in Ecuador in order to “further the Gospel of the Lord Jesus Christ.” An impressive display of showmanship, Jones and Larson cleverly masked the fact that in the spring of 1930 the two missionary entrepreneurs had “no funds, and no constituency and no ministry.”⁵¹ The two promoters shrewdly intertwined two purposes for their project. First, Jones and Larson argued that radio broadcasting would allow for a “larger and more efficient spreading of the gospel.” Presenting themselves as promoters of a simple gospel message,

Jones and Larson refrained from sectarian language; words such as religion and denomination, much less Protestant or evangelical, were absent from their statement. Second, the spread of the gospel via radio, the two Americans argued, would accrue significant cultural, political, and material benefits to the country of Ecuador. Jones and Larson promised to open the country to broadcasting. By doing so, the American station would “at once bring Ecuador further into the march of world progress which other South American governments have already entered.” The station would provide palpable political advantages to the Ecuadoran government, allowing instant broadcast of presidential messages throughout the country and helping to unify the country politically. Finally, the station would “awaken great business and economic forces,” while providing “commercial institutions opportunity for advertising throughout all important cities and villages.” Maintaining that they could obtain the “highest U.S. governmental recommendation” and that their project would be entirely financed in the United States, Jones and Larson emphasized the cost-free benefit of the project to the Ecuadoran government. (Its only cost would be lost revenue from a waiver of customs duties on all imported equipment, requested by the two Americans). In sum, fusing the benefits of the gospel with those of national broadcasting, Jones and Larson argued credibly that they sought “the blessing of Ecuador, spiritually and economically.”⁵²

Jones and Larson’s project promised technical benefits for the republic as well. The proposal contained two technical components: a transmitter and receivers. In discussing the former, Jones and Larson stressed the contemporaneity of their proposed equipment; the station would employ only a “modern, thoroughly equipped radio broadcasting transmitter” which was “of the highest standard” and the “best equipment

built,” such as Western Electric or RCA, including the “latest design in every detail,” such as high efficiency crystal control, and one kilowatt in power. (Faced with limited funding at the onset of the Depression, the station would in fact begin broadcasting twenty months later on a 250-watt transmitter, custom built in a garage in Chicago by a mission engineer and later shipped to Ecuador.) Receivers formed an integral part of the organizers’ original plan for the station. Recognizing that Ecuador almost completely lacked receiving facilities, Jones and Larson offered to provide 25-30 receivers (complete with batteries and loudspeakers) free of charge and to place the sets in “strategic ‘Key’ places in cities and villages” within the broadcasting range of the station in order “to receive the Gospel messages we broadcast.”

Jones and Larson fused gospel and cultural programs and accentuated the broad, positive nature of their enterprise in order to appeal to Ecuadoran government officials. Emphasizing the non-sectarian nature of their religious message, the two men stressed that the station’s program policy would be “entirely constructive, and entirely helpful to every interest working for the good of Ecuador.” Programming would be “of pleasing and interesting variety...for all listeners, regardless of creed or church affiliation.” Drawing on his own musical background in revival radio, WJBT’s radio director intended that the new missionary station’s fare would consist of mostly “music, instrumental and vocal, interspersed with short gospel messages.” The station’s religious content would be limited to simple and brief non-sectarian messages, discretely ensconced in musical wrapping.⁵³

Jones and Larson likely received a favorable initial response from the Ecuadoran government since they began promptly to search for a site location in the country. The

organizers' choice lay between the port city of Guayaquil on the Pacific coast, which enjoyed easy access and a high missionary population, and the capital city of Quito, located at 9,500 feet some 10-12 miles from the equator, after which the country was named. In July 1930, Jones traveled to Washington, D.C to meet with a Secretary in the South American Division of the State Department in order to discuss possible locations for a radio station in Ecuador. Given the lack of radio facilities in the country, the official possessed little data on Ecuador, but discouraged Jones from building a station near the equator.⁵⁴ The magnetic relationship with the north and south poles, it appeared, would damage radio signals emanating from the median latitude.⁵⁵ The State Department official also encouraged Jones to construct a station at a low altitude. A report prepared contemporaneously by engineers of a leading American radio manufacturer and obtained by C&MA missionaries in Guayaquil discouraged locating a radio station in Quito. Ground absorption resulting from the high level of mineral ore deposits in the surrounding mountain would weaken radio signals emanating from the capital.⁵⁶ In a significant turn of events, Jones and Larson chose to ignore official and professional advice to avoid locating the station in Quito. Instead, the founders made a strategic decision to locate the station in the political capital of the country in order expressly to stay close to the government and allow themselves to be observed. "They'll watch our mistakes and tell us," Jones later wrote, "and we'll show them exactly what we are doing."⁵⁷

After deciding to build the station in Quito, Jones and Larson awaited news of the government's decision. Working through the mission agency's lawyer, Dr. Calisto, a former senator the Ecuadoran Congress, C&MA representatives pressed the government

for a radio permit. On August 15, 1930, as he was setting sail from New York City for a four-month tour of Ecuador, Jones received word that President Isidro Ayora had signed a twenty-five year contract with Larson and D.S. Clark, now chairman of the C&MA in Ecuador.ⁱ The terms of the contract favored the Americans indeed. The government granted the station “perfect freedom” to conduct its religious programs (in Jones’s own words).⁵⁸ The government allowed the station to choose its own frequency and call letters and requested Jones to help in the drafting of the country’s radio laws.⁵⁹ The government permitted the station to install at least 25 receivers in locations in Ecuador which the American contractors deemed convenient or advantageous.⁶⁰ In return, the station agreed to be non-commercial and non-denominational and to explicitly refrain from political involvement.

Jones and Larson’s stance of ostensible political neutrality resulted in a dubious accommodation with the ruling government forces in Ecuador, which served the Americans’ interests by securing a long-term broadcast franchise. Larson and Clark agreed to allow the government four hours a week (208 hours per year) for “agricultural data, weather reports, and political news” and up to 20% of the station’s air-time upon demand.⁶¹ Where possible, the station agreed to hire local Ecuadorans.⁶² In addition to a steady fare of cultural programming, including national music, each day’s broadcast would close with the Ecuadoran national anthem.⁶³ Thus, as in Jones and Larson’s original proposal, the station would combine its spiritual agenda with a broader package of distinctly national interest; its programs would be both “evangelical and

ⁱ Given Ecuador’s lack of radio laws, Congress had to subsequently confirm Ayora’s decree by a special act, which it did.

educational.”⁶⁴ Most importantly, the station would do nothing on the air to offend official bureaucrats or members of the executive branch.

In August 1930, Jones and his brother departed for Ecuador. During his four month survey of Ecuador, from August to November 1930, two noteworthy events occurred. First, after consulting with C&MA personnel in Quito from October 1-4 at their mission retreat, Jones selected the call letters for the new station. Starting with “HC,” Ecuador’s international sign, Jones selected “HCJB” to stand for the motto “Heralding Christ Jesus’ Blessings.” Shortly after the conference, Jones wrote his wife that he had chosen the station’s letters perhaps less ingenuously “to fit the slogans and stand for Jones Brothers!”⁶⁵ (Clarence’s brother Howard later became the station’s first manager.) Second, on October 13, eight days before his return to the United States, Larson and Clark signed over the government contract to Jones, who now acted as the station’s principal organizer and director.

Jones and Larson had experienced notable success with the Ecuadoran government. This good standing proved remarkably durable and long lasting. In August 1931, five months before it went on the air, the infant station survived its first of many regime changes, as the new government honored the terms of the original contract without alteration.⁶⁶ Jones later estimated that, over the ensuing fifty years, the station withstood 40-50 “revolutions” in the country (Jones’s term) without a significant interruption of its operations.⁶⁷ In 1937, and again in 1940, government officials permitted the station to expand its outreach by increasing its transmitter power to 1,000 and 10,000 watts, respectively. On January 17, 1948, Ecuador’s president conferred the National Order of Merit on the station. The same year, the government extended HCJB’s

contract for an additional 25 years, allowing it to increase its power to 100 Kw. In Jones's view, the government had renewed HCJB's contract eight years ahead of schedule in order to pre-empt the station from leaving for another country.⁶⁸

Jones recognized the unique opportunity which the Ecuadoran government had afforded North American missionaries: "It is doubtful if similar freedom of operation and helpful consideration would be vouchsafed by governments in any other part of the world to such a radio station as HCJB."⁶⁹ It is difficult to overstate the importance of the Ecuadoran government's support of for HCJB. Without the official backing of the Ecuadoran state in 1931, it is unlikely that the evangelical station would have survived in the country. It is equally hard to imagine how HCJB could have acquired a toe-hold – or at least so favorable a start - anywhere else on the continent. The state shielded North American conservative evangelicals (and those who partnered with them) from opposition in civil society to their activity and presence, particularly among Catholic priests, Ecuadoran nationalists, indigenous peoples, and even some national Protestant leaders.⁷⁰

HCJB's favorable relations with the Ecuadoran government became the model adopted by missionary broadcasters during the second half of the twentieth century. How do we explain HCJB's clear success in this area? Three factors stand out: non-involvement in politics, positive religion, and local knowledge. Jones singled out apoliticism and positive religion as the "cardinal principles" guiding the station's government and church relations: "How do you broadcast when you're in a foreign land?... never mix in politics and ... preach a positive gospel."⁷¹ Avoiding political subjects altogether and never criticizing the regime on the air arguably represented

HCJB's only option, given its weak legal position as an outsider. Nevertheless, HCJB's political silence entailed a dangerous liaison with the powers-that-be and an implicit endorsement of the governing status quo in Ecuador. Jones and Larson's choice to locate in Quito and to use station facilities for explicit official propaganda (such as official programs, Presidential addresses, and the Ecuadoran national anthem) tied HCJB's interests directly to those of the Ecuadoran national government.

Jones attributed the station's positive religious message to its non-denominational identity. HCJB abstained from criticizing other religious groups, particularly Catholics. By refraining from preaching or teaching sectarian doctrines on the air, station officials presented themselves as non-partisan. Official license to engage in evangelical broadcasting stemmed for the station's non-denominational set-up: "We have a right to give educational and religious programming, but its [sic] on the basis of the Word of God."⁷² The station preserved its freedom to broadcast by focusing not on church doctrines or denominational teachings, but on the unchanging truths of the Bible – that is, through a "judicious, though 100% clear-cut presentation of God's word." Jones linked denominationalism with partial understanding: "Our work is undenominational in character. We exalt the whole Bible and the finished work of Christ."⁷³ Jones maintained that HCJB's broadcasts were "free from any particular interpretation of the Bible." From the outset, then, HCJB presented a distinctly conservative evangelical presentation of the gospel suited to the mission field.⁷⁴

HCJB derived a great deal of its political success, particularly in the early stages, from local knowledge obtained through field C&MA missionaries. Reuben Larson's social work among the Quechea Indians and government service gave him credibility in

the eyes of the state. Jones felt that “the good-will built up by these splendid transactions between Larson and the Gov’t. [sic] served as the basis of favorable approach for the new radio project.”⁷⁵ Dr. Calisto, the C&MA attorney, played an instrumental role in the procurement of HCJB’s initial contract.⁷⁶ Several of the “founding families of HCJB” were C&MA field missionaries who provided the “gringo” Jones with practical logistical support, housing, and language services – in short, inside knowledge of local customs.

Raising Grass-Roots Support in the “Homeland,” November 1930 - September 1931

Having procured a government license, Jones returned to the United States, where he turned his attention to raising support for the missionary station. Before he could return to Ecuador and formally open HCJB, Jones needed to procure funds to pay for his recent trip, purchase land for the station, and acquire a transmitter. Arriving at the Chicago Gospel Tabernacle in November 1930, Jones discovered he would have to raise money for expenses on his own from scratch. On September 27, C.L. Eicher, the Tabernacle’s missionary secretary had written to Jones in Ecuador, informing him that his South American account was overdrawn and that the Tabernacle could not produce the \$600 Jones needed for lawyer fees and travel expenses. Eicher indicated “the money market [was] awfully tight” and that little money was coming as pledges.⁷⁷ Upon return to Chicago, the missionary department of the Tabernacle told Jones that they did have the \$2,000 in funds to pay for his trip and that he would have to cover the cost himself.⁷⁸ Prior to leaving Ecuador, Jones had located a site in Quito – a 2 ½ acre estate belonging to a deceased English merchant. Upon the promise of “friends at home” to help provide the asking price of \$16,000, Jones agreed to purchase the real estate. When the downturn

in America's economic fortunes prevented supporters from doing so, Jones had elected to rent the property instead.⁷⁹ A rental payment of \$500.00 now fell due January 1, 1931, which must have weighed heavily on Jones's shoulders.⁸⁰ For station equipment, Jones had given up on the idea of purchasing from commercial manufacturers, despite his overtures to the Ecuadoran government. Instead, he estimated that he needed nearly \$4,000 to custom-build a transmitter.

Paul Rader could offer little direct support to Jones. In August 1930, Jones's mentor had to withdraw *Breakfast Brigade* from syndication over CBS due to a lack of funds to pay for airing the broadcasts. Rader's radio experience had thus demonstrated the two-fold perils involved in the strategy of relying on voluntary contributions to then purchase air-time on commercial stations. When Jones first presented his idea of radio missionary work, Rader had expressed considerable enthusiasm. With his own funds for missions limited, Rader had suggested Jones build his radio station in India, where Rader's Christian Couriers had established a work. India enjoyed a long history and significant stature in evangelical missionary circles as the country where William Carey (1761-1834), an English Baptist shoemaker, had launched the modern missionary movement. When Jones had insisted on going to South America, mentor and protégé came to a parting of ways.

In his own memoirs, Jones magnified the degree of his separation from Rader, which paved the way for the establishment of his own independent identity. The historical record suggests a far more complex picture, highlighting the difference between public appearance and private reality. In July 1930, Rader had made a special speaking tour with the Jones brothers to raise funds for their pending trip to Ecuador. Rader wrote

to numerous pastors, seeking to “enroll” their enthusiasm in the project by asking them to conduct special services.⁸¹ In public meetings and promotional literature over the following year (until his final departure for Ecuador in September 1931), Jones stressed his strong personal connections with Rader, the Tabernacle, and the Christian Couriers. As late as May 1934, over two years after he entered the field, Jones wrote to Rader, expressing his continued commitment to Rader’s person and missionary vision.⁸² The Christian Couriers continued to support Jones with a modest allowance until at least the summer of 1934. The need to enlist the support of Rader and his organization thus papered over any genuine differences between the two men in the matter of missionary tactics. It is clear Rader and Jones agreed profoundly on the historic and strategic importance of missionary radio to the evangelical church.

In the fall of 1930, two timely circumstances alleviated Jones’s initial financial worries. The twin windfalls resulted from Jones’s experience in radio and his ties with the Chicago Tabernacle. First, Gerald Winrod, a conservative Baptist evangelist and political activist in Oklahoma City who headed a national restorationist movement, Defenders of the Christian Faith, contacted Jones with a job offer. Winrod asked Jones to take over as business manager of Station KGFG, which Winrod’s organization had recently acquired, and to assist with the running of Winrod’s new gospel tabernacle, set up in a renovated amusement pavilion. Having “absolutely no plans, nor now where [sic] to turn,” and entirely “on his own,” Jones accepted the offer.⁸³ For a salary of \$60 a week, Jones’s job was to “put the station on its feet commercially”⁸⁴ and expand its audiences into the Southwest by securing commercial contracts, raising program standards, and increasing power. Writing to his wife, Jones considered that the

commercial experience in particular would be “invaluable for our S.A. project later on.”⁸⁵ Second, Eicher wired Jones in Oklahoma on November 17 that he had received a sizeable gift for HCJB from an “old lady in Evanston” who had called up the Chicago Tabernacle. Following a half-hour interview with Eicher, the wealthy donor gave \$1,000 for the “South American Radio Project” and \$1,000 for Rader’s work in India. The timely donation almost exactly covered Jones’s overdraft of \$1,005.05.⁸⁶

In order to raise money, Jones took full advantage of his connections in the world of conservative fundamental Protestantism. Emblematic of a larger sociological pattern, Jones’s fund-raising efforts illustrated “the remarkable kind of networking that visionary, enterprising fundamentalists did to find support for their innovative ministries.”⁸⁷ Jones received enthusiastic personal endorsement from a wide section of “radio-minded” leaders of the independent fundamentalist movement. In addition to Paul Rader and Gerald Winrod, Jones received reference letters of enthusiastic recommendation in January 1931 from a series of prominent individuals: H.W. Shuman, President of the C&MA; R.R. Brown, a prominent, early radio evangelist and founder of the Omaha Gospel Tabernacle and the World Radio Congregation; Howard W. Ferrin, President of Providence Bible Institute; and Rader’s son Luke, an evangelist in his own right at the River-Lake Gospel Tabernacle in Minneapolis with his own daily radio program.⁸⁸ Jones showed little hesitation to bill the “backing of many of America’s outstanding religious leaders” which he had received in publicity material sent to possible donors.⁸⁹

By February 1931, Jones began to enjoy growing publicity. Jones planned from the outset to use his work with Winrod’s Defenders as a base in the Southwest from which to obtain funds for HCJB’s land and equipment. The aims of the two

organizations, at first, seemed mutually compatible. Winrod requested Jones to serve on the board of the Defenders' movement as its representative for South America.⁹⁰ In December 1930, Jones began to publish regular accounts of his missionary radio project in Winrod's magazine *The Defender*. Beginning in 1931, Winrod staged a series of special services and missionary conventions in Oklahoma City for audiences ranging from several hundred to a couple of thousand and included Jones as a featured speaker. During the first three months of 1931, Winrod and Jones took their show on the road to numerous cities in Texas, Michigan, and Ohio, employing Winrod's plane to fly between locations. Sold as a "Chautauqua, a rare Musical Program, a revival, a Missionary Convention, and a Bible Conference" rolled into one, the week-long "Great Defenders Conferences" promised to prop up the sagging faith of fundamentalist Christians by meeting their combined intellectual and spiritual needs through Bible and prophecy teaching by prominent fundamentalist authorities, which directly attacked the "organized infidelity" of religious modernism and "the atheistic theory of Evolution."⁹¹ Billed as the spokesman for "Missionary Pioneering" recently returned from the "South American jungles," Jones held three meetings a week in which he rallied support among his conservative religious audiences for HCJB, taking up a collection for the station on the last night of the conference.

Jones used print media effectively to publicize HCJB. In the winter of 1931, Jones prepared a two-page brochure, "Giving 'Wings' to the Gospel Story in South America," which listed "10 Facts Concerning Radio Station HCJB." Jones's selective "facts" carefully balanced the forward-looking and traditional aspects of his radio project; they emphasized the unique features of the "new and progressive forward move for missions

in South America” and the technical qualifications of the staff as “experts in radio technique,” while stressing the station’s clear evangelical purpose, conservative orthodoxy, and institutional backing.⁹² In March 1931, the Chicago Tabernacle agreed to pay the postage for a mass mailing, which Jones expected to total 35,000 individuals - including 15,000 names from the Tabernacle’s mailing list and 20,000 from the Defenders.⁹³ Winrod encouraged Defender subscribers to support Jones’s solicitation out of their monthly tithe payment.⁹⁴ The wider popular press also caught wind of Jones’s path-breaking story. Brief items identifying the missionary radio project appeared in Chicago papers the *American* and *Daily News*. The mission station grabbed the attention of *Time* magazine, which reported that Jones, operating as a scout on behalf of Rader’s Christian Couriers, had “stolen a march on other foreign missionaries” by procuring a 25-year permit for a “powerful” station in Quito.⁹⁵

Jones welcomed modern means to communicate the gospel. Jones’s over-arching goal was straightforward: “Our one objective, in this as in all things, is the salvation of souls and the blessing of Christians.”⁹⁶ Yet Jones’s approach to missions was pragmatic: “Our whole creed of service is “Use everything we can that God has given us in this Twentieth Century to speed up the taking of the First Century Message.”⁹⁷ In the cause of evangelism, Jones was willing to cooperate with “every progressive movement with a spiritual objective.”⁹⁸ Jones enthusiastically embraced modern technology (radio, aviation, and motion pictures), which he characterized as “spiritual logistics” that “sped up” missionary methods by “giving wings” to the gospel.⁹⁹

Jones utilized radio to publicize HCJB. In February 1931, Jones enlisted the backing of Winrod and wrote to 42 fundamental radio preachers in the continental United

States, Alaska, Canada, and the Canal Zone, asking them to celebrate “South American Radio Week” by airing brief promos for Jones’s “pioneer radio-missionary project.”

These announcements, featuring “brief chats” by Jones, highlighted the most advanced features of the station to conservative evangelical listeners, emphasizing that the “super-power short-wave broadcasting station” constituted a “unique and revolutionary project” that augured “a new era in missionary methods.”¹⁰⁰ In return for a letter to Jones, respondents could receive a free souvenir - a wooden spoon carved in Ecuador.

Though he only used it on a limited basis, Jones was one of the first evangelical missionaries to conceive of using aviation to expedite the spread of the gospel. Despite a lack of money, Jones decided to purchase a six-passenger plane for use in his deputation work and for travel to Ecuador. Jones hired an evangelical pilot, William Neville, who was sympathetic to Jones’s work. Neville located a plane, which Jones purchased for \$2,300, borrowing part of the funds from his brother-in-law Chet Churchill.¹⁰¹ Using the plane, Jones hatched a scheme to triple his weekly collections by branching out from Winrod’s week-long conference and holding his own parallel meetings in nearby towns, which he would reach by plane.¹⁰² However, grass-roots resistance to Jones’s idea centered on the missionary’s use of a plane, which was widely seen as an inappropriate and ostentatious display for a cost-pinching mission organization, led Jones to modify his proposal. Jones turned the plane over to Winrod’s organization, who then allowed him to use it “to speed up the Gospel” by carrying Jones over greater distances to a larger number of speaking engagements.¹⁰³

Jones’s boldest employment of media publicity involved motion pictures. Jones’s use of visual media in his missionary presentations began during a week-long missions

conference conducted at Winrod's Tabernacle in December 1930, where Jones showed "steriopticon" slides he had taken during his 1928 visit to Venezuela.¹⁰⁴ In order to keep current with the latest "right-up-to-the-minute" methods, Jones switched from slides to moving pictures in January 1931. On the closing night of the Great Defenders Conferences, Jones showed his "missionary motion pictures" of Ecuador and the Amazonian jungle, filmed during Jones's recent visit to the country and which Jones entitled "Radio – The New Missionary." Winrod promoted Jones's movies in the Defenders' conference program, calling the three full-sized film reels as the "finest and most interesting moving pictures you ever looked at."¹⁰⁵ In his own publicity, Jones stressed the newness of using motion pictures in missionary work: "nothing like them has ever been produced."¹⁰⁶ Attracted by the novelty of the medium and the subject matter, large numbers reportedly turned up for Jones's moving missionary picture show, allegedly packing houses in the largest auditoriums available in conference cities.

Jones small-scale film work captured, in miniaturized form, the essence of the evangelical approach to modern media. Jones was likely the first North American missionary to produce film footage in the field to be used for promotional purposes with American audiences. Shooting film in the Ecuadoran jungle was no small feat, but required considerable planning and effort; Jones lugged film reels on mule-back, in dugout canoes, and over jungle trails in the Ecuadoran forest and finally by steamship back to the United States. Despite their difficulty, Jones felt motion pictures represented a "great stride forward in missionary methods to ordinary sterioptican slides" because of their greater ability to capture real life.¹⁰⁷ Unlike still slides, "living pictures" could show "the real conditions and customs of the people" and convey a "vital, lasting impression,"

in Jones's view. In Jones's words, the movie camera "takes" pictures and "catches all the varied, interesting scenes." Jones's published account in *The Defender* magazine reflected his enthusiasm for his subject: "These unusual pictures simply capture the crowds, and most strikingly present the thrilling story of Radio Station HCJB."¹⁰⁸ Jones's only regret of "missionary moving-pictures" was their lack of sound, which would have provided even greater fullness, allowing his audiences to pick up the "weird music of the Indians, the calls of the birds and the other interesting sounds that accompany the 'sights' one sees." Local inhabitants, unused to Western photography, sensed that film-making involved more than simply taking pictures. Jones's "shooting" film in Ecuador on behalf of HCJB terrified several natives; Jones overcame the fear of frightened subjects by giving them coins.

"Capturing" crowds on film offered real advantages to missionaries. Media technology allowed missionary promoters such as Jones to transform foreign subjects into objects for consumption by fundamentalist audiences at home. Film "capture" functioned to familiarize American church-going viewers with the unknown mission field. Techniques of visual representation materialized distant "unsaved" populations, making them more palpable and immediately present, while masking the process of editorial selection. The depiction of "heathen" Ecuadorans on film affirmed their desperate need for Protestant evangelical religion and Western civilization. The selective choice of scenes from Ecuador's cultural and natural landscape ("Indians; natives; bull-fights; soldiers; jungles," a "witch doctor at work on a native" and "vast vistas of rugged slopes and canyons") confirmed popular stereotypes of the country, clearly revealing the "lurid customs and hopeless conditions of our dark-skinned brothers and sisters in

Ecuador.” The life-like familiarity of motion pictures translated directly into financial support for the station, since Jones closed his public viewing by taking a collection. Jones reported that thousands of viewers discovered a new interest in missions as a result of his “interesting, educational, and spiritual presentation.”¹⁰⁹

In addition to raising funds, Jones also recruited personnel for the new missionary station. By engaging missionary workers (and religious nationals), rather than paid professional staff, Jones affirmed the station’s evangelical identity and set an important precedent for future missionary broadcasters. Eric Williams, a young engineer with CBS, ran the controls of Paul Rader’s radio broadcasts in the Tabernacle, which resulted in his conversion to evangelical Christianity. When Jones returned from Ecuador in the fall of 1930, he persuaded Williams to join his six-member Ecuadoran team. Williams quit his job with CBS and began work in his garage on a Navy-style spark-gap transmitter for HCJB.¹¹⁰ In addition to Williams and his wife Ann, the remainder of Jones’s radio staff included three other “executives and artists” trained in radio: Jones’s wife Katherine (a “studio artist”), his brother Howard (slated as day-to-day station manager), and Lillian Peterson, a pianist.¹¹¹ By utilizing a largely volunteer evangelical staff, Jones kept the station’s start-up expenses to a minimum, reinforced its religious mission, and maintained a degree of autonomy from the marketplace.

Meanwhile, Jones undertook legal steps to formalize his broadcasting arrangement. As a foreign station, Jones had a government license in Ecuador, but no presence under American law. Benjamin F. Welty, a former Democratic U.S. congressman turned attorney and Jones’s uncle by marriage, recommended Jones incorporate for purposes of collecting money in the United States. On April 27, 1931,

Jones incorporated the World Missionary Radio Fellowship (WRMF) under the laws of the state of Ohio, using Lima, his wife's home, as the address of record. Jones named himself, his brother Howard, Eric Williams, and their respective spouses as the company's trustees. In addition to his legal services, Jones also asked Welty to obtain for him a letter of introduction from Secretary of State Henry Stimson, which Welty endeavored to acquire through the offices of local Ohio congressman John L. Cable.¹¹²

Jones's choice of World Radio Missionary Fellowship as the title for the new broadcasting organization was significant. From the outset, Jones adopted a global vision for his new station, making it clear his sights were not restricted to Ecuador, or even South America. The articles of incorporation specified the corporation's purpose as the erection and operation of radio stations "for missionary broadcasting in all parts of the world."¹¹³ The new name indicated the station's missionary purpose and its use of radio, which were clear, but the precise shape of the enterprise was far from self-evident. Should it be modeled after a traditional mission society, or a commercial arrangement, such as a corporation or company? Jones felt a new type of cross-cultural missionary communication called for a new form of missionary organization. Jones chose to develop a new organizational structure – the fellowship – that linked the non-denominational, faith-based character of the station directly to its broadcast activity. Just as radio passed beyond all boundaries, including those of traditional churches, denominations, and mission organizations, so the idea of "fellowship" connoted "different kinds of people, different churches, different backgrounds" coming together around the central idea of missionary broadcasting. The WRMF would provide the organizational umbrella under which member organizations could unite. After World War II, WRMF's fellowship

structure would allow HCJB to interlock with other missionary broadcasters and construct a global network of like-minded missionary broadcast stations.

Significantly, the corporation's ecumenical arm extended only so far. In its first meeting, held in Lima on July 25, the corporation's trustees (Jones, his wife, and sister-in-law, who also acted as proxies) quickly restricted membership in the WRMF to persons who subscribed to conservative evangelical doctrine, including the full inspiration of the Bible and the virgin birth, atonement, and resurrection of Christ. The trustees deliberately barred from membership (by 2/3 vote) any group which denied these doctrines "in the manner of the popular heresy generally known as 'modernism.'"¹¹⁴ Partners who wanted to sign on with WRMF would have to come from within a fairly narrow circle of "fellowship."

HCJB's first year would sorely test Jones's reliance on faith in independent donations to finance his mission. Jones later admitted that the station's first year was his "greatest day of doubt" – "when we all had no money, we had no help, and we didn't know the language in the early days of radio."¹¹⁵ By March 1931, Jones complained that speaking tours with the Defenders were not working in HCJB's favor. Since Winrod's organization had such large overhead, Jones felt he always came out "at the small end of things" financially.¹¹⁶ On March 15, Jones reported "miserable" results from meetings in Muskegon and Grand Rapids, Michigan. As a result, he still had not raised the \$500 needed by April 1 for a rental payment.¹¹⁷ Jones came increasingly to the conclusion that he would have to work out some other financial arrangement for HCJB than collaboration with Winrod.¹¹⁸ On April 4, Jones reported he had not met the need for \$3,750 to begin construction of the transmitter, which held up his departure for Quito.¹¹⁹

Jones's response to the financial pressures experienced throughout 1931 shaped the new station's philosophy and organizational identity. As a "faith missionary institution," Jones established fiscal restraint as the station's "primary premise." The "principle of keeping within the limits, the amount, the budget the Lord sent in" became an over-riding concern for the organization.¹²⁰ Assuming that incoming receipts reflected divine will, Jones chose to trim the size and scope of the station's operations to match its income rather than contract debt. Jones's decision had important consequences, fixing the populist roots of the station in the larger evangelical movement and tying its gradual growth to a stream of voluntary contributions received from grass-roots donors. Future missionary broadcasters later emulated HCJB's popular and fideistic approach to managing its finances.

Unable to make financial arrangements profitable with Winrod, Jones left the Defender tour by May to organize his own speaking itinerary. To develop engagements, Jones utilized contacts and rented facilities where needed. In May, Jones appeared in Minneapolis at Luke Rader's River-Lake Tabernacle, where he showed his movies. Jones then traveled throughout Nebraska, where he spoke in C&MA and Presbyterian churches and broadcast over KFOR in Lincoln.¹²¹ Beginning in July, Jones returned to Chicago in order to prepare for an imminent departure for Ecuador. Under the auspices of the Chicago Tabernacle, Jones continued to host meetings in the area, showing motion pictures at the Highland Park Tent and renting out and setting up his own meeting tent. Jones traveled with Rader to speaking appearances in Milwaukee.¹²²

Jones's final months in America were accompanied by an improvement in public relations with Rader. In August, disappointed over Rader's failure to enthusiastically

promote Jones's missionary radio project in public, Clarence and Howard held a lengthy conference with the evangelist, during which Rader assured the young men he would "really back them to the limit" and would permit the station to be a "Courier affair" tied to him personally for both "fellowship and leadership."¹²³ Apparently, Rader's commitment appeared to draw immediate results. Jones toured with Rader, where he wrote that the speaker was "pushing us right." On August 17, Rader began plugging for HCJB on his noon-day broadcast over WJJD. Rader's support held out the promise of monetary returns. Dedicating his entire broadcast over several weeks to the missionary station, Jones contended that a "definite financial pull will be made for us."¹²⁴

The departure service for the South American missionary party at the Chicago Tabernacle marked the last public appearance for Rader and Jones together. By late August, Jones was able to set his departure date from the Tabernacle for September 27. At the farewell service, Jones demonstrated a flair for drama. Decorating the platform as a jungle scene, Jones placed the transmitter on center of the stage, where it was dedicated for missionary service. Afterwards, Rader gave Jones his blessing in private, taking two golden cufflinks off his shirt and handing them dramatically to the departing missionary. Though they would correspond, Jones would not see his mentor again. As a result, Jones did not witness Rader's demise. Deeply in debt, Rader left the Chicago Gospel Tabernacle in 1934 and moved to the Gospel Temple in Fort Wayne, Indiana where he continued to broadcast over a small local station, WOWO. In poor health, Rader settled two years later in Hollywood, California, where he died on July 19, 1938 of prostate cancer, a largely forgotten man who has since been "little remembered in the canon of evangelical history."¹²⁵

Reaching the “Uttermost Parts of the World,” 1931-1945

Unlike the suggestion of Alvin Goffin, Station HCJB in Ecuador did not emerge whole-cloth in 1931 as a base for world-wide evangelization by North American fundamentalists.¹²⁶ Instead, the station’s goals emerged subtly over time in response to local conditions. Closely examining the historical records of HCJB’s origins demonstrates the tactical flexibility and creativeness of missionary broadcasting’s pioneers as they pursued their goal of evangelization in response to a changing broadcast environment. Jones’s initial vision for missionary radio in 1928 was to evangelize South America; in 1929, Jones had not even heard of the country of Ecuador. In his proposal to the Ecuadoran government, presented in the summer of 1930, Jones clearly intended to erect a 5,000 watt “super-power short-wave” station to reach the entire continent. Reality, however, soon checked such lofty ambitions. The severe shortage of receivers in the region which Jones discovered during his survey trip from August to November 1930 confirmed the need to develop a more gradual approach to broadcasting as a listening audience developed. Unable to raise large amounts of money in the summer of 1931, Jones was likely forced to revamp and scale down his immediate plans. This included developing a far less expensive local radio station, employing a mere 250 watts of power. The goal of directly evangelizing the globe (as opposed to South America) via HCJB (as opposed to other missionary radio stations) did not form an explicit part of Jones’s original plan, but developed incidentally in the station’s first decade as HCJB first established a local presence, then increased the power of its transmitters over the course of a decade, accidentally discovering in the process unexpected technical benefits to broadcasting on short-wave from the equator.

HCJB, the “Pioneer Missionary Broadcaster,” started from humble beginnings as a feeble local station. Jones’s team used the cottage of the estate rented by the station as a studio and initially housed the transmitter in a sheep-shed. Employing an initial frequency of 5986 kilohertz (50.26 meters) located at the middle of the dial (the same wavelength utilized by Radio Vatican in their inaugural service half a world away), HCJB launched the world’s first Protestant missionary broadcast on December 25, 1931.¹²⁷ The first program lasted half an hour. It included the station’s first music (a trombone solo by Jones of the popular hymn “Great is Thy Faithfulness”) followed by the preaching of Reuben Larson in Spanish and D.S. Clark in English, all broadcast through a make-shift carbon microphone hung in a packing box lined with red flannel.¹²⁸ The station’s 250-watt signal, little stronger than a pair of light bulbs, barely reached across the capitol Quito, where a mere six receivers waited to pick it up.

Over the ensuing decade, Jones and the managers of HCJB developed a strategy to gradually expand their locally-based facilities. The success of the approach provided a developmental model for later missionary broadcasters. The strategy had two main components. First, HCJB’s directors opted to develop multiple local, intermediate, and long-distance transmitters and stations, which operated simultaneously in parallel. Second, officials utilized the example of the early church recorded in the First Book of the Acts of the Apostles as a blueprint for radio evangelism through the construction of larger and larger concentric geographic spheres of influence. As recorded in Acts 1, the early church had begun its evangelistic work in Jerusalem, then preached the gospel to the province of Judea and later to the surrounding area of Samaria, only last carrying the message to the “uttermost parts of the world.” Similarly, HCJB would begin by focusing

on local audiences in Quito and gradually expand its broadcasts to reach the country of Ecuador (“Judea”), the rest of South America (“Samaria”), and eventually the entire globe (the “uttermost parts of the world”). Use of multiple transmitters and gradual development of its facilities offered HCJB certain advantages. Expansion through voluntary donations rather than debt-financing lay in line with HCJB’s identity as a “faith mission.” Adoption of an explicit model from the early church as recorded in the Book of Acts provided HCJB’s plan with Scriptural authority, important in appealing to evangelical donors. A gradual approach would provide the station time and opportunity to build up local listening audiences through a receiver distribution program. Linking facilities expansion with concentric geographic regions also made sense for technical reasons, since it required more power to broadcast higher frequencies further distances from the station.

HCJB underwent steady expansion during its first decade. Officials focused their initial attention on the station’s “witness” to “Jerusalem” – the city of Quito and its environs. On February 25, 1932, the station instituted regular daily programs, after changing its frequency.¹²⁹ Despite its weak signal, Jones reported that HCJB could be heard in Chicago, as well as Bogota, Colombia.¹³⁰ By 1933, the station was on the air two hours a day from 8-10pm, broadcasting to Ecuador, half Colombia, parts of Peru and Venezuela.¹³¹ In 1934, the station broke apart its original 250-watt transmitter into two 50 watt long-wave and 200 watt transmitters in order to provide more focused coverage. Operating on 308 meters (where it increased in power to 800 watts by 1944), the station’s long-wave transmitter provided invaluable service to local listeners on radios distributed by the station. The station’s 200-watt transmitter began airing programs on 73 meters (so-

called “intermediate short-wave” or tropical band) to “Judea,” reaching Ecuador and the surrounding Andean region up to 450 miles during the day and 1,000 miles at night.¹³² In September 1937, the station expanded its broadcasts to South America (“Samaria”), dedicating a 1 Kw transmitter custom built for the station by Victoriano Salvador, an Ecuadoran national. Operating on 33 meters (8841 kc), the transmitter provided service to both South America and the world over a three-year period, until the arrival of the station’s 10 Kw transmitter in 1940. In 1937, the station received reports from Brazil, as well as from international listeners in Portugal, England, and the United States. In 1940, the station inaugurated its high-powered 10,000-watt short-wave transmitter, built and installed by Clarence Moore, a Mennonite preacher and engineer who joined the station in 1937. Along with the path-breaking quad antenna patented by Moore, the first antenna which could be directed anywhere in the world, the transmitter made HCJB known world-wide, giving the station a permanent, sizeable global footprint.¹³³

Expansion of language services kept pace with increases in transmitter power, reflecting progressively the station’s local, regional, and international presence. HCJB’s initial broadcasts were almost entirely in Spanish, which remained the dominant program language throughout HCJB’s history. The station’s dedicated its long-wave (308 meters) and tropical-band (73 meters) transmitters exclusively to Spanish and Quechua programming. The station pioneered in the transmission of vernacular language broadcasts produced and performed by local nationals, which subsequently became standard practice in the field. Carmelo Ochoa began HCJB’s broadcasts in Quechua, the “principle indigenous language of the Andes” spoken by some 14 million potential listeners in Ecuador, Southern Colombia, Peru, Bolivia, and Northern Argentina. Ochoa,

an Ecuadoran national from Cuenca who had moved to Quito, was converted by Larson and D.S. Clark, who persuaded her to broadcast on HCJB.¹³⁴ In 1932, Ochoa began transmitting 15 and 30 minute programs over HCJB; her broadcast grew to over 100 hours a week and remained a staple on the air until Ochoa's retirement in 1960.¹³⁵

European language broadcasts on HCJB followed the course of political events overseas. On June 23, 1937, Reuben Larson (of Midwestern Scandinavian stock) initiated Swedish language broadcasts. An NBC affiliate and a local coordinating committee for the Office of the Coordinator of Inter-American Affairs (headed by Nelson Rockefeller), HCJB served as a sort of broadcasting haven during World War II in the western hemisphere, where it advertised itself as "The Aerial Ambassador of Good Will to the Americas."¹³⁶ The station instituted French broadcasts in 1940 and added Russian programs in March 1941, produced by the Slavic Gospel Association in Chicago.¹³⁷ By early 1942, the station broadcast nine hours a day in Spanish, 2 ½ hours in English, and 15 minutes in Swedish and Russian. In the summer of 1942, the station instituted a series of foreign language programs in Swedish, French, Dutch, Czech, and Russian, aimed at refugee colonies who had sought asylum in South America.¹³⁸ As events deteriorated in Europe, missionary broadcasters who could no longer acquire time on commercial European outlets (such as Miner Stearns of Global Gospel Broadcasting in Brussels) took to the shortwaves over HCJB, airing broadcasts in French, Czech, Dutch, Italian, and Yiddish, aimed at their captive European audiences. At its war-time peak, Jones estimated that the station broadcast 18 languages, including Arabic and Indian (Hindi), although the number quickly abated after the war following the re-opening of commercial outlets and the postwar expansion of missionary broadcasting.¹³⁹

Programming during the station's first decade reflected the musical background and revival training of HCJB's principal American organizers as well as the local character of the station. In keeping with Jones's experience, music formed the mainstay of HCJB programs – both recorded and live. Station programmers attempted to use Latin culture as an enticement to attract listeners for purposes of conversion. Jones favored musical programming because it bridged cultural divides and provided ideal “bait” for evangelism. As a “universal language,” music provided “an attractive entry to the Gospel. It opens doors, everyones [sic] interested in music.”¹⁴⁰ In the station's early years, much of the station's music was live, featuring local groups as well as missionary studio artists. Jones taught in the Ecuadoran music conservatory and frequently recruited classical musicians to play over the station. In addition to “typical and classical music,” the station featured news, pro-democratic features, and women's and children's programs.¹⁴¹ Francisco Cruz, an Ecuadoran, became the station's General Manager in August 1934 after the return of Howard Jones to the United States. In addition to “preparing and presenting Ecuadoran cultural programs,” Cruz hosted his own gospel show, which featured listener letters and became a popular regular feature of the station.¹⁴² By 1937, the Ecuadoran government had established a chain of 15 stations in the country, originating its weekly program, *National Hour*, over HCJB.¹⁴³

From its start, the station employed Ecuadoran evangelicals in program production and announcing, as well as the technical operation of the station, setting an example for future missionary broadcasters. Prominent Ecuadorans in the station's early history included chief engineer Victoriano Salvatore, language programmer and announcer Carmelo Ochoa, station manager Francisco Cruz, and Bible teacher G.

Arroyo. By 1944, the station employed 28 full-time American missionaries and over twice as many (some 60) nationals.¹⁴⁴ Jones later maintained that the station trained most of the radio engineers in the country.¹⁴⁵

The expansion of HCJB's international service provided the opportunity to pioneer in another area – the use of sponsored American programming. A radio convert of Paul Rader, evangelist Charles Fuller developed a popular preaching program during the 1930s, *Old Fashioned Revival Hour*, which became a conservative evangelical staple on the radio dial and one of the most popular radio shows in the country. By 1938, five million listeners across the United States picked up Fuller's program on 128 stations of the Mutual Broadcasting System.¹⁴⁶ Fuller first heard HCJB in 1940, after the station increased its power to 10,000 watts. Upon noticing the station, Fuller allegedly decided upon HCJB as his overseas outlet. Fuller reportedly told Jones "I want you to be a missionary arm for my work there." When Jones agreed to broadcast Fuller's programs (presumably for free), Fuller refused to accept unless he paid for the time. Fuller's purchase of air-time represented the first paid (sponsored) programming plan on missionary radio.¹⁴⁷ Sponsorship was made technically possible by the use of "Electrical Transcription," which HCJB pioneered in the mission field (along with the Seventh-day Adventist church). Producers recorded programs in the United States on vinyl acetate discs, which were then shipped to overseas outlets for distribution over religious and commercial stations. By 1941, Fuller could be heard on Sunday mornings for an hour in English as well as Spanish, along with six other "transcribed" programs, such as the successful *Lutheran Hour* produced by Charles Maier, which appeared on Wednesday in Spanish and English.¹⁴⁸

Early success led HCJB to expand and promote its sponsorship program. HCJB advertised its services in 1941 to potential sponsors: “A large and fruitful field in radio is open to Christian leaders and organizations wishing to reach the Spanish-speaking world through HCJB by use of electrical transcription.”¹⁴⁹ By March 1944, HCJB carried staples of the American evangelical conservative broadcast community around the world, providing the station with valuable revenue. Sponsored programs included *Old Fashioned Revival Hour*, *The Lutheran Hour* (Walter Maier), *Anderson Gospel Tabernacle* (Paul Billheimer), *Back to the Bible* (Theodore Epp), *Radio Bible Class* (M.R. DeHaan), *Young People’s Church of the Air* (Percy Crawford), and *Word of Life Hour* (J. Wyrzten).¹⁵⁰ Later additions included the *Haven of Rest* and *Call of the Orient* (the signature program of the Far East Broadcasting Company) as well as shows sponsored by Dr. Bob Jones, the conservative fundamentalist leader and university president from South Carolina.¹⁵¹ By 1953, the station produced its own English-language program (*Ecuadoran Echoes*) and broadcast 3 ½ hours daily of American-sponsored programming during the morning and evening slots on short-wave.¹⁵² With the expanded programming provided by American sponsors, HCJB was able to broadcast seven days a week for 24 hours a day by 1956.¹⁵³

Conclusion

The Surprising Character of Missionary Radio

The formative years 1931 to 1945 shaped the long-term character of Station HCJB, setting the mold for the field of missionary broadcasting during the post-WWII period. HCJB’s experience demonstrated the vigor and creativity of the innovators of

evangelical missionary radio. Clarence Jones and his collaborators effectively exported the style of religious radio known as radio revivalism, which relied heavily on music and preaching aimed at producing individual conversion decisions, mixing it effectively with local cultural programming to produce a highly marketable formula for mission fields around the world. As a “faith mission,” the station formed part of a larger religious movement that combined supernaturalism with an anti-ecclesiastical populism. The early history of the station, with its timely meetings, odd turn of events, and “remarkable Providences,” illustrated the “heightened expectations of supernatural direction and intervention” which characterized not only the leaders of fundamentalism, but its grass-roots donors and missionary volunteers as well.¹⁵⁴ HCJB officials assiduously maintained a positive religious message and non-denominational stance, steering clear of direct entanglements with Catholics; the result was a favorable standing with the Ecuadoran government. Led by the example of Clarence Jones, the station showed imaginative resourcefulness in raising funds for its operations, from networking and grass-roots appeals to the path-breaking use of sponsored religious programs. Finally, as will be examined closely in the following chapter, HCJB, following the lead of Jones, made substantial efforts to build listening audiences through radio distribution programs, rather than waiting on underdeveloped commercial forces. In short, Jones and HCJB acted far more like innovators and pioneers than social conservatives or traditionalists.

The success of missionary radio was predicated on the prior success of radio revival in the United States. Despite limited evidence that it had reached new audiences or brought in new converts, radio in the United States performed important cultural functions for conservative evangelicals during its first two decades which paved the way

for the expansion of radio into the foreign field. Along with Bible institutes and the missionary enterprise, radio provided glue that helped to hold the loose network of conservative churches together as fundamentalists entered the cultural wilderness after the disastrous Scopes Trial in 1927.¹⁵⁵ Broadcasting allowed fundamentalists to maintain a sense of community while continuing to communicate their message at the fringes of American society. The wide popularity of syndicated shows such as Fuller's *Old Fashioned Revival Hour* and Walter Maier's *The Lutheran Hour*, which at one time fielded more letters than *Amos 'n' Andy*, reassured conservative Protestants of the viability and vitality of their religious movement, as well as its broader cultural value. Rightly or wrongly, radio preachers believed the medium could reach people who would not seek out fundamental churches, touching them directly in the intimate places they lived and frequented, such as their homes, their cars, even their bars and pool halls.¹⁵⁶ Radio could thus provide fundamentalists – those “marginalized populists” as Joel Carpenter has characterized them - with important exposure, familiarity, and legitimacy before the wider American public.¹⁵⁷ The legitimization afforded fundamentalists by radio ultimately helped convince grass-roots evangelical supporters of its utility for the mission field.

Perhaps unexpectedly, fundamentalists who started missionary radio promoted radio as a positive, even “progressive,” influence in Latin America.ⁱⁱ Beginning in the late nineteenth century, Protestant missions in Latin America had been tied to liberal forces,

ⁱⁱ Use of the term “progressive” is generally meant to connote in-step with the overall progress of modern Western civilization and an open, even welcoming, attitude to cultural change. In the context of Latin America during the 1930s (the setting in which Jones uses the term), “progressive” implied alliance with the liberal forces of political and economic modernization on the continent. Usage is not intended to make any formal connection to the Progressive movement of the late nineteenth century and early twentieth century in the United States.

who enlisted them as allies in their anti-clerical movement against conservative forces, particularly the alliance of the Catholic Church and state. Radio extended the relationship between religion and modernizing forces on the continent. As James Schwoch has demonstrated, the expansion of radio in Latin America was closely linked to the capitalist system in general and to the expansion of the American radio industry and the spread of a consumer culture in particular.¹⁵⁸

Protestant missionary broadcasting extended the link between radio and modernity in Latin America in two ways -- one in rhetoric and one in reality. First, HCJB officials promoted the station as a positive source for Ecuadoran development. Jones touted the “tremendous contribution” HCJB would make to “the future welfare and development of Ecuador” and the “prestige” that radio would provide the country.¹⁵⁹ Radio would inaugurate a new day for the government and people of Ecuador, bringing the country into the march of world progress already underway on the rest of the continent. Such language, of course, was thinly veiled self-promotion. HCJB did little to advance the cause of modernization in Ecuador (or Latin America) except to back the current administration in power. On issues of political and economic reform or social justice, HCJB managers took no action that might threaten the station’s carefully crafted and hard-won standing with the Ecuadoran government. Conservative evangelicals would not risk impugning the spiritual “purity” of the gospel abroad through political action or social involvement.

Yet, in more subtle and less conscious ways, HCJB officials did introduce a set of modernizing norms from the United States into the Ecuadoran environment through the combined medium of religion and technology. Radio revivalism encouraged listeners

through conversion to internalize the values of a Protestant evangelical American culture, such as individualism and voluntarism, which were closely tied to free-market forces in religion and linked indirectly with a commercial ethos via the station. Radio religion encouraged a personalized and experiential mode of spiritual encounter – a decided move away from the Roman Catholic Church, where corporate experience was mediated by the authoritative presence of priests, sacrament, and liturgy. While the shift in values lay in the strict sphere of personal religion, changes in universal assumptions also held important, long-term implications for the individual conduct of political, social, and economic life as well.

Evangelical revivalists, such as Clarence Jones, associated radio technology with a forward-looking move of God's Spirit. The first generation of conservative radio preachers and evangelists considered broadcasting a "revolutionary" method of spreading the gospel, which allowed them to keep pace with the dynamism of the modern world. While the message of Christ and his commission to preach the gospel to the world had remained completely unchanged for two millenia, the means available to do so altered with each generation. In Rader's view, while Christ commanded that his followers take the "message of 'grace'" forth into the whole world, he did not specify the precise method to do so, leaving it to impassioned souls to "find many ways and use every means possible."¹⁶⁰ Missionary broadcasting thus involved "employing 20th century methods to tell out the First Century message."¹⁶¹ Radio revivalists such as Rader and Jones adopted a highly instrumentalist (as opposed to a contextualist) view of communication processes. These men judged that the overall merits of conveying a specific message (and obtaining converts) far outweighed the need to consider at any length the possible ramifications

involved in the choice of particular means. Jones considered that radio would mark a new “advance” in the history of Christian missions, as the “most effective” and “least expensive” method of religious propaganda ever known.¹⁶² Electronic media, such as radio, would allow evangelical missionaries to “speed up” dissemination and more effectively spread their message to far greater numbers of people, keeping pace with a growing “heathen” (unconverted) population. Given the “progressive” move of God’s spirit, evangelical entrepreneurs like Jones felt they had no choice but to cooperate by formulating new personnel, organizations, and institutional arrangements to channel the Spirit. In the process, perhaps unknowingly, conservative faith missions like Jones’s exported not only faith in a particular interpretation of the Bible and a brand of American religion, but an ease with market methods, a confidence in the American entrepreneurial spirit, and an optimistic faith in modern technology, which they believed would together produce significant results.

From its inception, missionary radio broadcasting, as reflected in the experience of HCJB, echoed a basic tension between the conservative doctrinal content of evangelicals’ message and their use of contemporary, forward-looking methods to spread it. As the historian of fundamentalism Joel Carpenter points out, the architect of HCJB formed part of a second generation of fundamentalist leaders in the early twentieth century who were more concerned with extending the movement’s boundaries through evangelism than with prolonging the controversy with modernists or preserving the doctrinal purity through cultural separation.¹⁶³ As Carpenter has observed, the revival style and ethic were integral to the fundamentalist movement – no more so than when fundamental evangelicals exported their message abroad. “Even though fundamentalists

praised the separated life, their tendency to withdraw was qualified by their urgent desire to tell the world about Jesus. They felt compelled to frame their message in a way that would capture popular interest and address common concerns.”¹⁶⁴ A product of its evangelical impulse and its revivalist heritage, “capturing” audiences lay at the heart of the American missionary broadcasting enterprise from the outset, as the next chapter’s examination of HCJB’s pioneer receiver program will make clear.

Note concerning HCJB documents:

Please note that the documents of Stations HCJB are not organized into a formal archive. A rudimentary filing system exists, but there are no formal collections. Where possible, I have indicated file numbers as finding aids. For numerous documents, however, no specific address or location exists. In such cases, the term “unfiled” is employed. Occasionally, cabinet and drawer numbers are given in lieu of file numbers.

¹ Letter from Dr. Joachim Schmidt to Reuben E. Larson, April 23, 1976, File 342 (“History Paper Update after 1960”), HCJB Archives (HCJB), Colorado Springs, CO.

² Clarence Jones, “A Survey of Religious Broadcasting in the 20 Countries of Latin America,” February 15 - July 8, 1945, “History – Organization,” HCJB, 5.

³ James Schwoch, *The American Radio Industry and Its Latin American Activities, 1930-1939* (University of Illinois, 1990).

⁴ See Martin E. Marty and R. Scott Appleby, eds, *Fundamentalisms Observed* (University of Chicago, 1991) and *Fundamentalisms Comprehended* (University of Chicago, 1995); Bruce Lawrence, *Defenders of God: the Fundamentalist Revolt Against the Modern World* (Harper & Row, 1989); Gilles Kepel, *The Revenge of God: The Resurgence of Islam, Christianity, and Judaism in the Modern World* (Penn State University, 1994); and Manuel Castells, *The Power of Identity* (Blackwell, 1997).

⁵ Cited in “Fundamentalism and the Modern World: A Dialogue with Karen Armstrong, Susannah Heschel, Jim Wallis, and Feisal Abdul Rauf,” at the Sojourners’ website, www.sojo.net, January 18, 2003.

⁶ J. Harold Ellens, *Models of Religious Broadcasting* (Eerdman’s, 1974); Ben Armstrong, *The Electric Church* (Thomas Nelson, 1979); William Fore, *Television and Religion: The Shaping of Faith, Values, and Culture* (Augsburg, 1987); Stewart M. Hoover, *Mass Media Religion: The Social Sources of the Electronic Church* (Sage, 1988); Quentin Schultze, *Televangelism and American Culture: The Business of Popular Religion* (Baker, 1991); Janice Peck, *The Gods of Televangelism: The Crisis of Meaning and the Appeal of Religious Television* (Hampton, 1993); Daniel A. Stout and Judith M. Buddenbaum, *Religion and the Mass Media: Audiences and Adaptations* (Sage, 1996); Linda Kintz and Julia Lesage, eds, *Media, Culture, and the Religious Right* (University of Minnesota, 1998); Paul Apostolidis, *Adorno and Christian Right Radio* (Duke University, 2000) and “Scanning the “Stations of the Cross:” Christian Right Radio in Post-Fordist Society in M. Hilmes and Jason Loviglio, eds., *Radio Reader: Essays in the Cultural History of Radio* (Routledge, 2002) and Susan Harding, *The Book on Jerry Falwell: Fundamentalist Language and Politics* (Princeton University, 2000).

⁷ An important exception to this is the recent work of sociologist Manuel Castells and social theorist Anthony Giddens. See Manuel Castells, *The Rise of the Network Society* (Blackwell, 1996) and *The Power of Identity*, (Blackwell, 1997) and Anthony Giddens, *Runaway World: How Globalization is Reshaping Our World* (Routledge, 2000).

⁸ Martin J. Neeb, Jr., “An Historical Study of American Non-Commercial AM Broadcast Stations Owned and Operated by Religious Groups, 1920-1966,” (Ph.D. Diss., Northwestern University, 1967), 2.

⁹ J. Harold Ellens, *Models of Religious Broadcasting* (Eerdman’s, 1974), 16.

¹⁰ J. Harold Ellens, *Models of Religious Broadcasting* (Eerdman’s, 1974), 17.

¹¹ J. Harold Ellens, *Models of Religious Broadcasting* (Eerdman’s, 1974), 34.

¹² J. Harold Ellens, *Models of Religious Broadcasting* (Eerdman’s, 1974), 18

¹³ Joel A. Carpenter, *Revive Us Again: The Reawakening of American Fundamentalism* (Oxford University, 1997), 124.

¹⁴ Tona Hangen, *Redeeming the Dial: Radio, Religion, and Popular Culture in American Popular Culture in America* (University of North Carolina, 2002), 40.

¹⁵ D.G. Hart, *That Old-Time Religion in Modern America: Evangelical Protestantism in Modern America* (Ivan Dee, 2002).

¹⁶ Tona Hangen, *Redeeming the Dial: Radio, Religion, and Popular Culture in American Popular Culture in America* (University of North Carolina, 2002), 6.

¹⁷ Tona Hangen, *Redeeming the Dial: Radio, Religion, and Popular Culture in American Popular Culture in America* (University of North Carolina, 2002).

¹⁸ Tona Hangen, *Redeeming the Dial: Radio, Religion, and Popular Culture in American Popular Culture in America* (University of North Carolina, 2002), 55.

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- ¹⁹ On Rader, see also D.G. Hart, *That Old-Time Religion in Modern America: Evangelical Protestantism in Modern America* (Ivan Dee, 2002).
- ²⁰ Joel A. Carpenter, *Revive Us Again: The Reawakening of American Fundamentalism* (Oxford University, 1997).
- ²¹ D.G. Hart, *That Old-Time Religion in Modern America: Evangelical Protestantism in Modern America* (Ivan Dee, 2002), 65.
- ²² "Copy of Official Letter from Paul Rader to Many Pastors," July 1930, in "Copies of Original HCJB Letters and Documents," File 407 ("Early Days"), HCJB.
- ²³ Program from the "Great Defenders Conference," March 1-8, 1931, Lima, Ohio, File 407, HCJB.
- ²⁴ J. Herbert Kane, *A Concise History of Christian World Mission: A Panoramic View from Pentecost to the Present* (Grand Rapids, MI: 1982), Chapters 7 and 8.
- ²⁵ J. Herbert Kane, *A Concise History of Christian World Mission: A Panoramic View from Pentecost to the Present* (Grand Rapids, MI: 1982), 102.
- ²⁶ Joel Carpenter, "Introduction" to Joel Carpenter, ed., *Missionary Innovation and Expansion* (Garland Publishing, 1988).
- ²⁷ Joel Carpenter, "Introduction" to Joel Carpenter, ed., *Missionary Innovation and Expansion* (Garland Publishing, 1988).
- ²⁸ Clarence W. Jones, interview with Nancy Woolnough, June 1966, File 355 ("Dr. C.W. Jones"), HCJB, 9.
- ²⁹ "Radio Station HCJB Forges Ahead," *The Defender*, March 1931, in "Copies of Original HCJB Letters and Documents," File 407, HCJB.
- ³⁰ Robert Frederick Swenson, "An Oral History of Dr. Clarence W. Jones," February 21, 1977, Folder 12, Box 9, Collection 349 (Clarence Wesley Jones – Papers), BGCA, 19; Clarence W. Jones, "Questions Answered by Dr. C. W. Jones," File 417, HCJB, 16-18.
- ³¹ Clarence W. Jones, interview with Nancy Woolnough, June 1966, File 355, HCJB, 4.
- ³² Clarence W. Jones, interview with Nancy Woolnough, June 1966, File 355, HCJB, 3.
- ³³ Letter from Clarence W. Jones to Paul Rader, May 8, 1934, "Corr-CWJ and Rader-Eicher, 1932-34," HCJB.
- ³⁴ Clarence W. Jones, interview with Nancy Woolnough, June 1966, File 355, HCJB, 6.
- ³⁵ Letter from Paul Rader, no addressee, January 27, 1931, with handwritten note from "CWJ:" "F. Cook for Book?," File 407, HCJB.
- ³⁶ Robert Frederick Swenson, "An Oral History of Dr. Clarence W. Jones," February 21, 1977, Folder 12, Box 9, Collection 349, BGCA, 21.
- ³⁷ Clarence W. Jones, "Questions Answered by Dr. C. W. Jones," File 417 ("C.W. Jones"), HCJB, 21; Clarence W. Jones, interview with Nancy Woolnough, June 1966, File 355, HCJB, 3.
- ³⁸ Clarence W. Jones, interview with Nancy Woolnough, June 1966, File 355, HCJB, 2-3; Robert Frederick Swenson, "An Oral History of Dr. Clarence W. Jones," February 21, 1977, Folder 12, Box 9, Collection 349, BGCA, 22.
- ³⁹ Quoted by Jones in a letter to Reuben Larson, January 31, 1944, File 364 ("Correspondence CWJ and R.E. Larson 1944"), HCJB; letter from Clarence Jones to Katherine Jones, April 8, 1930, Folder 6, Box 6, Collection 349, BGCA.
- ⁴⁰ Robert Frederick Swenson, "An Oral History of Dr. Clarence W. Jones," February 21, 1977, Folder 12, Box 9, Collection 349, BGCA, 34; Clarence W. Jones, interview with Nancy Woolnough, June 1966, "Bio: Jones, Dr. and Mrs. C.W.," HCJB, 6; "Taking Radio to the Mission Fields: Giving 'Wings to the Gospel,'" *The Defender*, February 1930, in "Copies of Original HCJB Letters and Documents," File 407, HCJB.
- ⁴¹ Clarence W. Jones, "Questions Answered by Dr. C. W. Jones," File 417, HCJB, 23.
- ⁴² Clarence W. Jones, "Questions Answered by Dr. C. W. Jones," File 417, HCJB, 23.
- ⁴³ James Schwoch, *The American Radio Industry and Its Latin American Activities, 1930-1939* (University of Illinois, 1990), Chapter 4.
- ⁴⁴ Lawrence D. Batson, "The Extent of the Development of Radio Over the World," in Irwin Stewart, ed., "Radio," *The Annals of the American Academy of Political and Social Sciences*, 142 (March 1929): Supplement, 21-31. Paraguay, Peru, and Venezuela possessed one station each, while Bolivia had two stations. Remaining countries in South America had the following numbers of stations: Argentina (22), Brazil (15), Uruguay (14), and Chile (8).
- ⁴⁵ Jerome S. Berg, *On the Short Waves, 1923-1945: Broadcast Listening in the Pioneer Days*

of Radio (McFarland, 1999), 82-84. According to Berg, "Radio El Prado," or Station Prado, broadcast from Riobamba on 6220 kc, while HC2RL, owned by Marie Piedad Castillo de Levi, broadcast limited evening programs from the port city of Guayaquil on 6770 kc. HC2JSB, known as "Ecuador Radio," claimed to be the first commercial broadcaster in the country in 1932.

⁴⁶ Alvin M. Goffin, *The Rise of Protestant Evangelism in Ecuador, 1895-1990* (University Press of Florida, 1994), 1.

⁴⁷ Alvin M. Goffin, *The Rise of Protestant Evangelism in Ecuador, 1895-1990* (University Press of Florida, 1994), Chapter 1.

⁴⁸ Alvin M. Goffin, *The Rise of Protestant Evangelism in Ecuador, 1895-1990* (University Press of Florida, 1994), p. 17.

⁴⁹ Alvin M. Goffin, *The Rise of Protestant Evangelism in Ecuador, 1895-1990* (University Press of Florida, 1994), p. 20.

⁵⁰ Clarence W. Jones, "Questions Answered by Dr. C. W. Jones," File 417, HCJB, 23-25.

⁵¹ "Fact Sheet on HCJB," HCJB.

⁵² Letter from Clarence Jones to Dr. P.P. Egnez B., Consul General of Ecuador, April 12, 1930, Folder 6, Box 12, Collection 349, BGCA.

⁵³ Letter from Clarence Jones to Dr. P.P. Egnez B., Consul General of Ecuador, April 12, 1930, Folder 6, Box 12, Collection 349, BGCA.

⁵⁴ "The ABC's of HCJB," HCJB; timeline, File 321, HCJB.

⁵⁵ Anonymous, "The Gospel Work in Ecuador," Folder 6, Box 12, Collection 349, BGCA, 1.

⁵⁶ "The ABC's of HCJB," HCJB.

⁵⁷ Robert Frederick Swenson, "An Oral History of Dr. Clarence W. Jones," February 21, 1977, Folder 12, Box 9, Collection 349, BGCA, 32.

⁵⁸ "Newscript," June 1942, Folder 6, Box 12, File 349, BGCA.

⁵⁹ Robert Frederick Swenson, "An Oral History of Dr. Clarence W. Jones," February 21, 1977, Folder 12, Box 9, Collection 349, BGCA, 31.

⁶⁰ [Decree] Number 183, *Registro Oficial*, Republic of Ecuador, Number 406, August 25, 1930, File 316 ("Ecuadorian Contract with HCJB – Copies of Registro Oficial (Various)"), HCJB.

⁶¹ [Decree] Number 183, *Registro Oficial*, Republic of Ecuador, Number 406, August 25, 1930, File 316, HCJB; "Radio Station HCJB Forges Ahead," *The Defender*, March 1931, in "Copies of Original HCJB Letters and Documents," File 407, HCJB; *Time*, February 9, 1931, 38; Robert Frederick Swenson, "An Oral History of Dr. Clarence W. Jones," February 21, 1977, Folder 12, Box 9, Collection 349, BGCA, 33.

⁶² Robert Frederick Swenson, "An Oral History of Dr. Clarence W. Jones," February 21, 1977, Folder 12, Box 9, Collection 349, BGCA, 46.

⁶³ "Inaugural Souvenir program," February 1940, Folder 6 Box 12, Collection 349, BGCA.

⁶⁴ *Time*, February 9, 1931, 38

⁶⁵ Letter from Clarence Jones to Katherine Jones, October 7, 1930, Folder 6, Box 6, Collection 349, BGCA.

⁶⁶ Letter from Clarence to Katherine Jones, August 27, 1931, Folder 6, Box 6, Collection 349, BGCA.

⁶⁷ Clarence W. Jones, interview with Nancy Woolnough, June 1966, File 355, HCJB, 9.

⁶⁸ Robert Frederick Swenson, "An Oral History of Dr. Clarence W. Jones," February 21, 1977, Folder 12, Box 9, Collection 349, BGCA, 41.

⁶⁹ "Inaugural Souvenir program," February 1940, Folder 6 Box 12, Collection 349, BGCA.

⁷⁰ Alvin M. Goffin, *The Rise of Protestant Evangelism in Ecuador, 1895-1990* (University Press of Florida, 1994).

⁷¹ Clarence W. Jones, interview with Nancy Woolnough, June 1966, File 355, HCJB, 9.

⁷² Robert Frederick Swenson, "An Oral History of Dr. Clarence W. Jones," February 21, 1977, Folder 12, Box 9, Collection 349, BGCA, 33.

⁷³ "Celebrating Radio Week – Feb. 15 to 22, 1931," File 342, HCJB.

⁷⁴ Clarence W. Jones, interview with Nancy Woolnough, June 1966, File 355, HCJB, 9.

⁷⁵ Clarence W. Jones, "Questions Answered by Dr. C. W. Jones," File 417, HCJB, 25.

⁷⁶ Clarence W. Jones, interview with Nancy Woolnough, June 1966, File 355, HCJB.

⁷⁷ Letter from C.L. Eicher to Clarence Jones, September 27, 1930, in "Copies of Original HCJB Letters and Documents," File 407, HCJB.

⁷⁸ Clarence W. Jones, interview with Nancy Woolnough, June 1966, File 355, HCJB, 6.

⁷⁹ Clarence W. Jones, interview with Nancy Woolnough, June 1966, File 355, HCJB, 5.

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- ⁸⁰ Letter from Clarence Jones to D. Stuart Clark, December 9, 1930, Folder 1, Box 6, Collection 346, BGCA.
- ⁸¹ "Copy of Official Letter from Paul Rader to Many Pastors, July 1930, in "Copies of Original HCJB Letters and Documents," File 407, HCJB.
- ⁸² Letter from Clarence Jones to Paul Rader, May 8, 1934, "Corr-CWJ and Rader-Eicher, 1932-34," HCJB.
- ⁸³ Letter from Clarence Jones to D. Stuart Clark, December 9, 1930, Folder 1, Box 6, Collection 346, BGCA.
- ⁸⁴ Letter from Clarence Jones to Katherine Jones, November 10, 1930, Folder 6, Box 6, Collection 349, BGCA.
- ⁸⁵ Letter from Clarence Jones to Katherine Jones, November 17, 1930, Folder 6, Box 6, Collection 349, BGCA.
- ⁸⁶ Letter from C.L. Eicher to Clarence Jones, November 18, 1930, in "Copies of Original HCJB Letters and Documents," File 407, HCJB.
- ⁸⁷ Joel Carpenter, "Introduction" to Joel Carpenter, ed., *Missionary Innovation and Expansion* (Garland Publishing, 1988).
- ⁸⁸ Letter from R.R. Brown, Pastor Evangelist, Omaha Gospel Tabernacle, addressed "To Whom It May Concern," January 14, 1931; letter from H.W. Ferrin, President, Providence Bible Institute, addressed "To Whom It May Concern," undated; letter from H.M. Shuman, President, The Christian & Missionary Alliance, addressed "To Whom It May Concern," January 14, 1931; letter from Gerald B. Winrod, addressed "To Whom It May Concern," January 27, 1931; letter from Luke Rader, addressed "To Whom It May Concern," undated; attached together with handwritten cover note from "CWJ:" "F. Cook for Book?," File 407, HCJB.
- ⁸⁹ "Celebrating Radio Week – Feb. 15 to 22, 1931," File 342, HCJB.
- ⁹⁰ Letter from Clarence Jones to D. Stuart Clark, December 9, 1930, Folder 1, Box 6, Collection 349, BGCA.
- ⁹¹ Program from the "Great Defenders Conference," March 1-8, 1931, Lima, Ohio, File 407, HCJB.
- ⁹² "Giving 'Wings' to the Gospel Story in South America," undated brochure (ca. early 1931), File 306 ("Broadcasting (1931-44)"), HCJB.
- ⁹³ Letter from Clarence Jones to Katherine Jones, March 18, 1931, Folder 6, Box 6, Collection 349, BGCA.
- ⁹⁴ "'Shooting' Missionary Moving Pictures for 'HCJB,' *The Defender*, April 1931, Vol V, No 12, Folder 6, Box 12, Collection 349, BGCA.
- ⁹⁵ *Time*, February 9, 1931, 38.
- ⁹⁶ "Newsprint," June 1942, Folder 6, Box 12, Collection 349, BGCA.
- ⁹⁷ "'Shooting' Missionary Moving Pictures for 'HCJB,' *The Defender*, April 1931, Vol V, No 12, Folder 6, Box 12, Collection 349, BGCA.
- ⁹⁸ "Giving 'Wings' to the Gospel Story in South America," undated brochure (ca. early 1931), File 306, HCJB; "'Shooting' Missionary Moving Pictures for 'HCJB,' *The Defender*, April 1931, Vol V, No 12, Folder 6, Box 12, Collection 349, BGCA.
- ⁹⁹ "Giving 'Wings' to the Gospel Story in South America," undated brochure (ca. early 1931), File 306, HCJB; Clarence Jones, *Radio, the New Missionary* (Moody Press, 1946).
- ¹⁰⁰ "Celebrating Radio Week – Feb. 15 to 22, 1931," File 342, HCJB.
- ¹⁰¹ Letters from Clarence Jones to Katherine Jones, March 10 and March 18, 1931, Folder 6, Box 6, Collection 349, BGCA.
- ¹⁰² Letter from Clarence Jones to Katherine Jones, March 12, 1931, Folder 6, Box 6, Collection 349, BGCA.
- ¹⁰³ Letter from Clarence Jones to Katherine Jones, March 18, 1931, Folder 6, Box 6, Collection 349, BGCA.
- ¹⁰⁴ Letter from Clarence Jones to Katherine Jones, November 17, 1930, Folder 6, Box 6, Collection 349, BGCA.
- ¹⁰⁵ Program from the "Great Defenders Conference," March 1-8, 1931, Lima, Ohio, File 407, HCJB.
- ¹⁰⁶ "Radio Station HCJB Forges Ahead," *The Defender*, March 1931, in "Copies of Original HCJB Letters and Documents," File 407, HCJB.
- ¹⁰⁷ "Radio Station HCJB Forges Ahead," *The Defender*, March 1931, in "Copies of Original HCJB Letters and Documents," File 407, HCJB.

¹⁰⁸ “Radio Station HCJB Forges Ahead,” *The Defender*, March 1931, in “Copies of Original HCJB Letters and Documents,” File 407, HCJB.

¹⁰⁹ “‘Shooting’ Missionary Moving Pictures for ‘HCJB,’ *The Defender*, April 1931, Vol V, No 12, Folder 6, Box 12, Collection 349, BGCA.

¹¹⁰ Clarence W. Jones, “Questions Answered by Dr. C. W. Jones,” File 417, HCJB, 26; Clarence W. Jones, interview with Nancy Woolnough, June 1966, File 355, HCJB, 4; Clarence W. Jones, “Questions Answered by Dr. C. W. Jones,” File 417, HCJB; “HCJB Beginnings: CWJ notes,” File 407, HCJB.

¹¹¹ “Giving ‘Wings’ to the Gospel Story in South America,” undated brochure (ca. early 1931), File 306, HCJB.

¹¹² Letter from B.F. Welty to Clarence Jones, May 23, 1931, Folder 6, Box 12, Collection 349, BGCA.

¹¹³ Articles of Incorporation, World Radio Missionary Fellowship, April 27, 1931, unfiled, “Legal Documents,” HCJB.

¹¹⁴ Meeting of the Members of the World Radio Missionary Fellowship, July 25, 1931, unfiled, “Legal Documents,” HCJB.

¹¹⁵ Robert Frederick Swenson, “An Oral History of Dr. Clarence W. Jones,” February 21, 1977, Folder 12, Box 9, Collection 349, BGCA, 54.

¹¹⁶ Letter from Clarence Jones to Katherine Jones, March 12, 1931, Folder 6, Box 6, Collection 349, BGCA.

¹¹⁷ Letter from Clarence Jones to Katherine Jones, March 15, 1931, Folder 6, Box 6, Collection 349, BGCA.

¹¹⁸ Letter from Clarence Jones to Katherine Jones, March 15, 1931, Folder 6, Box 6, Collection 349, BGCA.

¹¹⁹ Letter from Clarence Jones to Katherine Jones, March 18, 1931, Folder 6, Box 6, Collection 349, BGCA.

¹²⁰ Clarence W. Jones, interview with Nancy Woolnough, June 1966, File 355, HCJB, 12.

¹²¹ Letters from Clarence Jones to Katherine Jones, May 4 and May 11, 1931, Folder 6, Box 6, Collection 349, BGCA.

¹²² Letters from Clarence Jones to Katherine Jones, July 10 and July 13, 1931, Folder 6, Box 6, Collection 349, BGCA.

¹²³ Letter from Clarence Jones to Katherine Jones, August 14, 1931, Folder 6, Box 6, Collection 349, BGCA.

¹²⁴ Letter from Clarence Jones to Katherine Jones, August 15, 1931, Folder 6, Box 6, Collection 349, BGCA.

¹²⁵ Tona Hangen, *Redeeming the Dial: Radio, Religion, and Popular Culture in American Popular Culture in America* (University of North Carolina, 2002), 56.

¹²⁶ Alvin M. Goffin, *The Rise of Protestant Evangelism in Ecuador, 1895-1990* (University Press of Florida, 1994), 35 and 41.

¹²⁷ Clarence W. Jones, interview with Nancy Woolnough, June 1966, File 355, HCJB; “The Years,” File 344 (“Historical Paper – The Years, 1933-1971”), HCJB, 5; timeline, File 321 (“New Transmitters: 1960, 1967, 1968”), HCJB; Clarence W. Jones, “Questions Answered by Dr. C. W. Jones,” File 417, HCJB; Clarence W. Jones, “Questions Answered by Dr. C. W. Jones,” File 417, HCJB.

¹²⁸ “The ABC’s of HCJB,” HCJB.

¹²⁹ “HCJB Beginnings: CWJ notes,” File 407, HCJB.

¹³⁰ Letter from Clarence Jones to Katherine Jones, March 2, 1932, Folder 6, Box 6, Collection 349, BGCA.

¹³¹ “The Years,” File 344 (“Historical Paper – The Years, 1933-1971”), HCJB, 5.

¹³² The distance figures are for tropical bands in developing countries generally. Source: William Barden, Jr., *Radio Listener’s Guide* (Radio Shack, 1987), 24.

¹³³ Robert Frederick Swenson, “An Oral History of Dr. Clarence W. Jones,” February 21, 1977, Folder 12, Box 9, Collection 349, BGCA, 38.

¹³⁴ The starting year of 1932 is contested in the historical sources. The majority of sources indicate the year 1932, while some cite 1941. Primary sources: “HCJB World Radio,” unfiled, “Ecuador Broadcasting Report,” HCJB and timeline, File 321 (“New Transmitters: 1960, 1967, 1968”), HCJB. Secondary sources: Alvin M. Goffin, *The Rise of Protestant Evangelism in Ecuador, 1895-1990* (University Press of Florida, 1994).

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- ¹³⁵ Robert Frederick Swenson, "An Oral History of Dr. Clarence W. Jones," February 21, 1977, Folder 12, Box 9, Collection 349, BGCA, 42.
- ¹³⁶ Fred Fejes, "The U.S. in Third World Communications: Latin America, 1900-1945," *Journalism Monograph* 86 (February 1983).
- ¹³⁷ S.E. Moore, T. Warham, and P.I. Ritchie, "The Development of HCJB World Radio from 1931 to 1995," *100 Years of Radio*, Conference Publications 411, IEE, September 5-7, 1995.
- ¹³⁸ "Newscript," June 1942, Folder 6, Box 12, Collection 349, BGCA.
- ¹³⁹ Clarence W. Jones, interview with Nancy Woolnough, June 1966, File 355, HCJB, 11.
- ¹⁴⁰ Clarence W. Jones, interview with Nancy Woolnough, June 1966, File 355, HCJB, 10.
- ¹⁴¹ Untitled brochure, "Broadcasting 1944-1953," File 307, HCJB.
- ¹⁴² Timeline, File 321("New Transmitters: 1960, 1967, 1968"), HCJB.
- ¹⁴³ "The Voice of the Andes," 6th Anniversary Souvenir Program, "Anniversary, 6th 1937," File 297 ("Anniversary, 6th 1937"), HCJB.
- ¹⁴⁴ Field staff directory, Collection 364, HCJB; Joel Carpenter, "Introduction" to Joel Carpenter, ed., *Missionary Innovation and Expansion* (Garland Publishing, 1988).
- ¹⁴⁵ Robert Frederick Swenson, "An Oral History of Dr. Clarence W. Jones," February 21, 1977, Folder 12, Box 9, Collection 349, BGCA, 46.
- ¹⁴⁶ Tona Hangen, *Redeeming the Dial: Radio, Religion, and Popular Culture in American Popular Culture in America* (University of North Carolina, 2002), 88; Hal Erickson, *Religious Radio and Television in the United States, 1921-1991* (McFarland, 1992), 82-85.
- ¹⁴⁷ Robert Frederick Swenson, "An Oral History of Dr. Clarence W. Jones," February 21, 1977, Folder 12, Box 9, Collection 349, BGCA, 30.
- ¹⁴⁸ Ten-year anniversary program, 1941, File 307 ("Broadcasting (1944 -53)"), HCJB.
- ¹⁴⁹ Ten-year anniversary program, 1941, File 307, HCJB.
- ¹⁵⁰ Reuben E. Larson, "Status of Accounts of Sponsored Programs," March 11, 1944, File 365, ("Correspondence to CWJ from R.E. Larson 1944"), HCJB.
- ¹⁵¹ Untitled flyer, "Facts about Ecuador," File 307, HCJB.
- ¹⁵² Untitled flyer, "Facts about Ecuador," File 307, HCJB.
- ¹⁵³ "The ABC's of HCJB," HCJB.
- ¹⁵⁴ Joel Carpenter, "Introduction" to Joel Carpenter, ed., *Missionary Innovation and Expansion* (Garland Publishing, 1988).
- ¹⁵⁵ Joel A. Carpenter, *Revive Us Again: The Reawakening of American Fundamentalism* (Oxford University, 1997); Tona Hangen, *Redeeming the Dial: Radio, Religion, and Popular Culture in American Popular Culture in America* (University of North Carolina, 2002).
- ¹⁵⁶ Joel Carpenter, "Introduction" to Joel Carpenter, ed., *Missionary Innovation and Expansion* (Garland Publishing, 1988) and *Revive Us Again: The Reawakening of American Fundamentalism* (Oxford University, 1997), 131.
- ¹⁵⁷ Joel A. Carpenter, *Revive Us Again: The Reawakening of American Fundamentalism* (Oxford University, 1997), 131.
- ¹⁵⁸ James Schwoch, *The American Radio Industry and Its Latin American Activities, 1930-1939* (University of Illinois, 1990).
- ¹⁵⁹ "Celebrating Radio Week – Feb. 15 to 22, 1931," File 342, HCJB.
- ¹⁶⁰ Flyer entitled "South America and Radio," undated (ca. mid 1931), Folder 7, Box 5, Collection 349, BGCA.
- ¹⁶¹ "Newscript," June 1942, Folder 6, Box 12, Collection 349, BGCA.
- ¹⁶² Letter from Clarence Jones to Ray Edmann, with attachments "Celebrating South America Radio Week," February 3, 1931, file?, HCJB.
- ¹⁶³ Joel Carpenter, "Tuning in the Gospel" in *Revive Us Again: The Reawakening of American Fundamentalism* (Oxford University, 1997).
- ¹⁶⁴ Joel A. Carpenter, *Revive Us Again: The Reawakening of American Fundamentalism* (Oxford University, 1997), 126.

Chapter 3

Designing Capture: HCJB's Radio Circle, 1931-45

Introduction

Pioneering Missionary Radio Reception

The development of a substantial “homeland” interest in radio revivalism among American evangelicals by 1930 allowed Clarence Jones and his colleagues to extend radio evangelism to the missionary “regions beyond” during the ensuing decade. To “adapt radio broadcasting to missionary methods,” however, required several changes. First, operating broadcast equipment in tropical environments required additional maintenance; humidity burned out transformers, while parts, such as vacuum tubes, were costly and often hard to acquire. Second, cross-cultural electronic communication necessarily raised issues of language programming, requiring the translation of broadcasts into local vernacular tongues and idioms. Thirdly, communicating in developing countries required the provision of receivers; unlike the United States, radios remained a rare commodity in most of the non-Western world throughout the first half of the twentieth century. Concerning this last area, the lack of reception facilities overseas mandated creativity on the part of missionary broadcasters if they were to “get their message heard.”

Between 1931 and 1945, Jones and the directors of HCJB undertook a series of innovative measures to address the lack of receivers in Ecuador and achieve the station's immediate objective of evangelizing “Jerusalem” (the capital, Quito, and its environs) and “Samaria” (the country). Responding creatively to changes in his foreign environment, Jones adopted a series of shifting receiver strategies to jump start a

broadcast market in Ecuador and enable the country to become “radio minded.” Jones’s first receiver vision dates from his first missionary experiences; as early as 1928, he anticipated several of the challenges confronting missionary radio reception. From his arrival in Ecuador in 1930 through 1933, Jones and his associates encouraged the expansion of radio sales in Ecuador, working through existing commercial agents. In 1933, he launched his own import business, the Quito Radio Agency, relying on it until the following year to expand receiver ownership in the country’s capital. During this period, Jones looked into direct manufacturing by HCJB. Finally, in 1934, HCJB officials launched the Radio Circle, a project to promote wider usage of receivers, particularly among the poorer classes and peasantry. As this chapter will show, the Radio Circle did not emerge in an historical vacuum. Instead, it arose gradually as the culmination and synthesis of years of visionary efforts by Jones and his colleagues to build listening audiences in less developed broadcast environments.

The Radio Circle represented an innovative approach to creating audiences that embodied several important principles later emulated by missionary stations in their radio receiver programs during the postwar period. First, the Radio Circle typified the activist and creative approach to audience construction practiced by Clarence Jones and other missionary broadcasters. Rather than relying passively on commercial channels, Jones insisted that the missionary broadcaster had a responsibility to build a public for his religious programs by providing listeners with receivers. Second, as its name indicates, the Radio Circle embodied a quintessentially *social* solution to the problem of receiver shortage in developing countries, an approach which all other missionary broadcasters would emulate prior to the advent of the transistor radio. Third, HCJB officials under

Jones's direction relied shrewdly on *national* Christians to operate the Radio Circle, extend the arm of the station's influence, and increase the effectiveness of the station's limited resources.

A key theme in the development of missionary radio reception during the period 1931-45 was its close ties to the American radio market. Missionary radio reception fused not only the technological and spiritual dimensions, but the domestic and foreign realms as well. The shape and contours of American radio manufacturing – its features, makes, and models – set the parameters of radio reception in the mission field prior to 1945. Missionary broadcasters came to rely on American sources for both financing and hardware of their receiver programs. Only cheap radios purchased in the homeland with money from American evangelical churches made HCJB's inaugural missionary receiver program possible.

HCJB's Radio Circle epitomized the constructivist approach to audience building developed by missionary broadcasting during the period 1931 to 1970. Evangelical broadcasters in various parts of the world developed a social partnership with national labor to increase efficient reception of their station's programs. At the heart of these reception efforts lay the basic evangelical impulse of "capture" – the desire to bait or hook listeners, to train or discipline them through regularized listening, to familiarize them with the gospel message through daily exposure, and to produce religious conversions. Station officials referred to Radio Circle outposts as "fishing posts" where national Christians lured neighbors and friends through attractive programming and the atmosphere of their homes in order to evangelize their souls. Yet, despite the imagination of HCJB's experimental endeavor, the state of receiver technology and the lack of

available reception facilities severely constrained the station's expansion of its audience on a large scale prior to WWII.

Radio Reception at Home and in the Mission Field, 1922-30

The advent of wireless broadcasting in the 1920s provided a new link between the public and private spheres. The first electrical appliance to enter the home, “wireless” receivers allowed amateur operators to communicate electronically over great distances for the first time from the confines and security of their houses. Inexpensive receivers provided the *sine qua non* of popular broadcasting in the United States. At the dawn of the age of radio broadcasting in the United States, a large proportion of receiving sets were “cat’s whiskers” sets.¹ These sets, which employed a crystal detector coupled with a wire-point contact, remained popular through the mid-1920s since they were inexpensive, relatively easy to assemble, and did not require a battery to operate. Such home-made sets, however, required considerable skill and patience to man since crystal detectors were notoriously unstable; their unamplified signals mandated at least a 100-foot aerial and headphones to detect. “Regular” receiving sets, which used two to five vacuum tubes and regenerative circuits, amplified weaker signals and could pick up more distant stations. By 1926, roughly half of home receivers employed vacuum tubes and possessed loudspeakers.

Radio listening during the 1920s remained a highly class-specific, skilled, and gendered activity. Early valve-operated sets were costly to purchase and hence could be afforded only by the well-to-do middle and upper classes; in 1926, the average set cost \$125. Because they produced amplification, tube sets also consumed extensive power,

supplied by a cumbersome wet battery (the size of a contemporary car battery) and several dry cells, all of which needed regular replacement. Batteries took up a sizeable work area, making the set far from portable and consigning it to workspaces outside the small family living area. Valve sets required considerable skill to operate successfully – skill which was the almost exclusive domain of men. To tune in frequencies, male operators of early tube sets rotated three separate dials to vary the capacitance in each of the set’s circuits, carefully coordinating the knobs to tune the circuits simultaneously. In order to attain clarity and volume and prevent oscillation, which caused shrieks and feedback as well as interference to neighbors’ sets, users had to carefully monitor the level of voltage supplied to the filament and plate of the set’s tubes and to regulate the degree of regeneration in each of the receiver’s circuits. This necessitated careful, coordinated calibration of the set’s unmarked dials. Thus, receiver operation in radio’s early years required skill, patience, and tacit knowledge – in short, a proper “feel” for the apparatus. In the words of a *Radio World* editorial, tuning in the pioneering days of radio did not mean “just the vain twisting of a control dial until something happens” or the turning of a dial “in a childish and unknowing fashion waiting for the ‘magic box’ to spring a ‘hocus pocus’ trick.” Instead, proper tuning involved the “systematic, scientific manipulation of variable conditions” until the desired results were obtained.² The receiver’s open cabinet and unenclosed chassis, displaying its components for full view, conveyed the status of early wireless sets as technical objects operated by expert male tinkerers usually in the sequestered setting of a garage, attic, or basement.³

Jones appreciated the importance of radio receivers for broadcasting from his early experiences during radio’s experimental decade in the United States. He learned in

his early years as Rader's radio director beginning in 1925 that the number and nature of receiving sets in the greater Chicago area heavily influenced the size and type of audiences listening to the Chicago Gospel Tabernacle's Sunday broadcasts. Jones recalled of his early radio work with Paul Rader: "... there weren't many receivers around, just crystal receivers."⁴

Jones also demonstrated a keen, early appreciation for the role of radio reception in the foreign field during his first trip to South America in 1928. Writing from Curacao, Dutch West Indies in February 1928, Jones noted that local populations could pick up high-powered U.S. stations on the east coast, as well as a French commercial station on the island run by cable companies. Jones heard reports that missionaries inland in Brazil could bring in a New York station on a home-made two-tube set. Jones's observations appeared initially to validate his missionary broadcasting vision of transmitting directly to audiences overseas from the American mainland. Upon closer consideration, however, he perceived that the act of receiving broadcasts overseas (as opposed to simply transmitting them) composed a lethal obstacle to his original plan. To ensure reception of programs, Jones realized he would have to educate audiences and inculcate proper listening habits: "It seems that the great problem for us in broadcasting the gospel from Chicago would be the educational process of getting folks down here interested enough to buy and use receivers, as well as informing them in due time so they would be prepared to listen in." In addition to the value of disciplining listener habits, Jones also recognized the advantages of long-wave transmission in 1928. Longwave offered far superior local reception than short-wave transmission and faced little local competition in most developing countries during radio broadcasting's opening decade:

“The objection to high waves [shortwaves] as they reach this far from the States is the high amount of static they pick up; low wave [long wave] is very easy to pick up and carries “cleanly” and well. Well advertised programs of a gospel nature on a low wave would find a real welcome in all of these places, because the few program stations that do exist are so poorly equipped and handled as to be negligible.”⁵

Thus, during his first mission trip in 1928, Jones clearly understood the important role that radio receivers played overseas and perceived various means to enhance reception in the mission field.

By 1930, on the eve of Jones’s departure for the Ecuadoran mission field, radio receivers in America had undergone a fundamental transformation from the plaything of amateur hobbyists to a standardized, factory-built commodity available in many American homes. By 1930, two out of every five American homes possessed radio receivers.⁶ As Louis Carlat has argued, the entry of the wireless into the respectable spaces of the American home involved an extensive marketing campaign to transform radio listening from an amateur hobby for men into a leisure activity for the entire family. Radio manufacturers had to create consumers through advertisements geared to passive feminine users as “guardians of domesticity,” promoting radio as attractive household furniture and safe entertainment which neutralized the influences of the modern outside world by bringing them inside the parlor.⁷ Bringing the radio into the living room required simplifying radio operation for family use. This largely entailed reducing the technical challenge of tuning multiple circuits.⁸ The introduction of ganged capacitors in 1925, which linked together several radio circuits, led to the adoption of single-tuning as industry standard by 1928. Marking radio dials in meters (or kilocycles) rather than

degrees further facilitated tuning practice for the general consumer. Radio tuning became literally child's play - as simple as switching a set on and turning a single dial.

Radio receivers became a standard household item in the United States. Following the introduction of single-control tuning, improved superheterodyne circuits, and enclosed loudspeaker cabinets, and the adoption of extensive advertising campaigns, factory-built, AC-powered radios moved from the garage, basement, and attic into the respectable family spaces of the American living room, bedroom, and kitchen. Lower-cost "table" models became increasingly popular by mid-decade, replacing earlier "console" sets. By 1935, the average price of a set had fallen to \$40, within the reach of the two-thirds of American homes. With the introduction of automobile sets in 1930, radio became an increasing part of everyday life, accompanying Americans while they drove as well as stayed at home. By the mid-thirties, radio had become ubiquitous in the United States. More American families owned radios at the height of the Depression than indoor plumbing or telephone service.⁹ The United States also dominated the world radio market. By 1937, nearly 80% of American families owned a total of 30 million sets, more than half (53%) of the world total of about 56 million radios.¹⁰

Radio reception facilities in South America during the 1920s lagged considerably behind the radio-booming United States, upon which the southern continent depended overwhelmingly for supply. Several technical and cultural factors impeded the initial growth of receivers in South America during the first decade of radio broadcasting. In the view of scholar James Schwoch, the "disdain for technical operations" among Latin Americans required set manufacturers to ensure that radios were easy to operate, using few controls. The absence of technological research centers and trained mechanics or

engineers in Latin America further hampered the growth of an indigenous receiver market. Tropical climate affected set performance, particularly through damage caused by high humidity, such as rusting, for which American set makers compensated by including “more brass and copper parts in wiring and set construction.”¹¹ Most importantly, the time lag in establishing commercial stations and developing an American-style broadcasting system in Latin America during the 1920s resulted in a delay in receiver production as well.

Major Latin American countries formed important export markets for American radio set manufacturers.¹² After Canada, Mexico acted as the second largest export market for American radio equipment during the 1920s, topping \$1 million by 1929. Mexican consumers preferred American receivers, since electric tube sets introduced in 1925 could pick up numerous American stations. By 1930, Mexicans had imported 90,000 American sets – over 90% of the country’s total. Argentina enjoyed the highest per capita ownership of radios on the South American continent and formed a similarly important American market, consuming over \$1 million in radio material from the United States in 1930.¹³ In 1929, Argentines owned an estimated 525,000 receivers, or 52 sets per 100 people, nearly ten times as high a per capita rate of ownership as Brazil, the next highest country. Most receivers in Argentina were American-made, though Argentines also used British, German, and nationally produced sets.¹⁴ In 1929, Brazilians owned 250,000 radios, or 6.43 sets per 100 people. Most Brazilian radios came directly from the U.S. By 1930, American companies had captured 90% of the Brazilian receiver market, which comprised its ninth largest radio export market overall.¹⁵ The spread of receivers meant that American-style broadcasting permeated the everyday lives of Brazilians,

becoming in their view “an indispensable source of entertainment, information, culture, and ... national consciousness.”¹⁶

Ecuadorans owned fewer receivers than almost all other South American countries. In 1929, only 150 radio sets existed in Ecuador, or 0.10 sets per 100 people - a mere 0.1% of the country’s population.¹⁷ Records indicate only six sets in the capital Quito.¹⁸ Radio ownership in Ecuador was on the bottom end of the spectrum on the continent; only two countries (Bolivia and Colombia) experienced lower per capita ownership figures.¹⁹ Socioeconomic and regional disparities existed in set distribution as well. The few sets that existed in Ecuador were owned by well-to-do hobbyists, who communicated with each other, picked up stations in Lima, Peru, and listened in on the shortwaves to American stations.²⁰ Even Dr. Luis Calisto, the prominent Ecuadoran lawmaker who negotiated Jones and Larson’s radio contract with the Ecuadoran government, lacked a receiver, which he relied upon his American contacts to supply.²¹ Ownership of sets in South America clustered around stations, which were overwhelmingly located in large urban areas, such as capitals and coastal cities. Thus, even scantier numbers of receivers existed in remoter areas of Ecuador, such as the mountains or Amazonian jungle, where rural populations possessed minimal purchasing power.²²

Clarence Jones’s Vision for Missionary Receivers, 1929-30

Confronted by a dearth of receivers in missionary environments such as Ecuador, Clarence Jones developed an activist approach to radio evangelism that focused on the provision of sets. Jones felt that missionary broadcasters had a responsibility not only to

produce broadcasts, but listeners as well; in a foreign country where the population had no radio sets, the gospel broadcaster had to “do everything possible to get people to receive and hear the program.”²³ Jones construed the need to build listening audiences as initially a technical challenge to supply reception facilities: “This is entirely a problem of radio receivers or loudspeakers.”²⁴ Jones did not leave this activity solely to the market, however: “Not only the radio merchant, but in some cases where no other way presents itself, the missionary must look ahead and prepare to see to it that the desired audience shall get reasonably priced receivers quickly.”²⁵ Jones intended missionary supplies of receivers to stimulate, rather than replace, commercial channels. By exposing individuals and communities to the possibility of owning a receiving set and by raising “radio consciousness,” missionary stations paved the way for a commercial receiver market to develop: “Radio agents are quick to accommodate these prospects, and so, slowly but surely, the infiltration of a new idea takes place, and a whole nation becomes radio-minded.”²⁶

Like broadcasting, Jones construed radio listening for the Christian as an active responsibility rather than a passive activity. For Jones (and other HCJB personnel), radio “tuning” involved spiritual as well as technical work. Jones considered communication by electromagnetic waves a “profound mystery” comparable to communication with God through prayer.²⁷ Radio reception required far more than merely turning a receiver:

“...knowing how to “tune in” is more than a mechanical operation; it is also spiritual in meaning.... The Christian with a radio learns he has a spiritual responsibility as well as a pleasure in knowing how to ‘tune in’.”

This responsibility had four components: prayer and “prayerful listening” for evangelistic broadcasts, letter-writing to religious stations, financial support or “sustaining” of gospel

broadcasters, and active publicity for gospel radio by recommending gospel stations and inviting friends and neighbors to listen. Tuning in for Jones was thus both a devotional and a craft operation.

Beginning in 1929, Jones's proposals for a South American radio project included receivers as a central component. Transmitters and receivers made up the two pillars of Jones's original missionary vision for radio: "We came down with the vision of radio in missionary work with two angles, - one a central transmitter broadcasting the Gospel messages, and the second, the placing of small receivers in the churches and village gatherings of the natives with whom we cold kep intouch [sic] [could keep in touch] by the air."²⁸ In a written outline compiled in the winter of 1929, Jones included receivers in his list of "mechanical requirements for South America," intending them for the purpose of "distribution to establish 'listening public [sic].'"²⁹ In addition to government contacts and the separation of church and state, Jones cited "geographical" reasons for beginning radio in Ecuador – namely, the "good population available." Operating at 1 Kw on 150 meters wavelength, Jones estimated that from Quito, Ecuador his station could reach audiences of over 6 million people in the Greater Colombia region – 3.1 million in southern Columbia, 2 million in Ecuador (the country's entire population), and nearly 1 million in northern Peru.³⁰

In their original proposal to the Ecuadoran government in April 1930, Jones and Reuben Larson carefully laid equal stress on the construction of transmitting and receiving facilities in the republic. Clearly realizing that Ecuadorans had no radios and that the station would have to build audiences, Jones and Larson adeptly turned Ecuador's liability into a selling point for their missionary project by offering to

contribute towards Ecuador's listener base for free. Jones and Larson agreed to pay for the cost of "25-30 suitable radio receivers, fully equipped with speaker and batteries," which they would then place free of charge in strategic public locales. Jones argued that the station's broadcasting activity would open commercial opportunities in Ecuador: "When our programs create sufficient demand for receiving sets by those able to buy them for their individual use, a very lucrative market for some commercial house will be opened."³¹ The final contract signed with the Ecuadoran government acceded to Jones's and Larson's requests, giving HCJB the right to import at least 25 receivers free of charge and the freedom to install them "in the locations which the contractors judged convenient."³²

Importing Receivers, 1930-33

When Jones visited Ecuador for the first time in August 1930, he explored avenues for developing reception capabilities in Ecuador as part of his survey for the newly acquired broadcast franchise. On August 31, 1930, shortly after coming ashore in Guayaquil, Jones contacted William Reed, a pioneer Protestant missionary in Ecuador, who had helped open the country up to North American evangelicals in the early twentieth century. Arriving in 1897 with the Gospel Missionary Union, Reed had settled in Guayaquil in 1903, where he remained until his death in 1949. Reed pastored the city's first Protestant church, known familiarly as "the Templo," which numbered 139 members in 1932, and published a weekly newsletter called the Little Sunday Paper with a reported circulation of 6,000. In 1945, Reed would help organize the first national Protestant church in Ecuador, the Ecuadoran Christian and Missionary Alliance Church.³³ Given

Reed's history in Ecuador, his knowledge of the country, and his influence, Jones found it "natural" to search him out upon arrival.

William Reed had two sons, Allan and John. The two boys had grown up in Ecuador and were now actively involved in religious work, supporting missionaries and helping their father run his evangelical church. Allan and John Reed were important local figures in Ecuador, particularly in the coastal city of Guayaquil. Allan Reed already served as U.S. vice consul in Guayaquil; within a week of Jones's arrival in Ecuador, he introduced the missionary to the U.S. Consul, the Colombian Consul, and several other people of importance.³⁴ John Reed occupied the chair of English in the National University in Guayaquil.³⁵ Moreover, as partners in the import house of Reed & Reed, they ran one of the port's most prominent commercial firms.

The Reed brothers offered Jones the prospect of a leading commercial import business to bring radio receivers into the country. After his initial encounter, Jones summed the Reeds up as "great chaps" and "alert and winsome boys" who represented nearly ideal business partners for a missionary; they were "thoroughly consecrated and busy Christians" who were well known with a good business reputation. Jones considered the men "mighty important" as "Christian business men to missionaries."³⁶ Barely a week after his arrival, Jones expressed optimism about an arrangement with the Reed brothers to import and sell radios: "I believe we will have a splendid commercial hook-up," Jones confided to his wife. Jones discussed his radio project at length with the Reeds, consulting with them almost daily, while the Reeds in turn made "several valuable suggestions."³⁷ In the end, the Reed brothers "joined hands" with Jones, agreeing to form a company "to take over radio distribution." The Reeds planned to import three types of

basic sets for different ranges of reception: crystal “cat’s whisker” sets, two-vacuum tube and three-vacuum tube sets for more distant pick-up.³⁸ Just over a year after the agreement, at the time of HCJB’s first broadcast, Jones expressed optimism that his partnership with the Reeds had largely taken care of the problem of distributing radio receivers. Jones felt that the Reeds had “come across like a ton of bricks,” indicating that the businessmen had at the least proven reliable and enthusiastic.³⁹

From the start of the missionary broadcasting era, promoting awareness of radio receiver programs at home proved as important as distributing radios abroad. Publicization of the partnership with the Reeds in the United States provided important credibility for Jones’s upstart radio project with the American evangelical public. Given the size of Jones’s potential audience (over 6 million listeners), the near complete absence of reception facilities in the region were an easy target for criticism. By promoting the collaboration with the Reeds in publicity, Jones demonstrated that he had taken concrete steps to address the lack of receivers. In the winter of 1931, Jones sent out a mass-mailing brochure to raise money for the South American station to thousands of conservative American churchgoers, promising readers that a “program for distribution and selling of low-priced efficient receivers to the natives has been arranged for thru a Christian commercial establishment in Ecuador,” though Jones did not specify exactly who the “natives” were and whether they belonged to the upper, middle, or lower classes.⁴⁰ During the same period, Jones began to include a description of the receiver program on his South American Radio Project’s letterhead.⁴¹ In March 1931, an article run in *Moody Bible Institute Monthly*, a popular evangelical publication, identified two

business men in Guayaquil who had started a company to take over radio distribution for the missionary radio venture.⁴²

Jones's partnership with the Reed brothers appears to have lasted for roughly two-and-a-half years until Jones set up his own independent import agency in July 1933. Later assessments accorded a significant role to the Reed brothers in helping to establish a radio market in Ecuador. Jones subsequently attributed credit to the Reed brothers for "the tremendous increase in the listening audience of Ecuador." In Jones's view, the Reeds' possessed both the "vision and faith in radio" and "skillful promotion" which were critical in turning Ecuadorans towards radio in the early days of the country's radio market.⁴³ Historian Alvin Goffin attributed significant importance to the Reeds' work, since radio was "virtually nonexistent" in Ecuador when Jones arrived; as "a leading commercial house," the Reeds' efforts led to the situation being "greatly improved."⁴⁴

Despite these rosy later assessments, however, the collaborative efforts of Reed & Reed to create a radio audience for HCJB in Ecuador faced obvious limitations. HCJB had no control and little influence over the Reeds' activities. As a commercial concern, the Reeds operated strictly on a profit-making basis, despite their support for evangelical missions. Few Ecuadorans could afford the Reeds' radios, which appealed largely to middle and upper-income groups.⁴⁵ Since the import agency did not possess any outlets in Ecuador's interior, distribution remained confined to the coastal area and did not reach the capital of Quito, the sierra highlands, or the Amazonian jungle. Despite the Reeds' apparent success, Jones clearly had much more to do if he were to create a large number of listeners for HCJB.

Eric Williams and the Guyaquil Radio Market, 1933-34

In 1932, HCJB's radio engineer, Eric Williams, moved from Quito to Guyaquil with the goal of launching a sister gospel station. Williams's experience in Guyaquil over the following two years matters for several reasons. Williams's work provides a window into reception conditions in Ecuador's second most important city during the early 1930s, illustrating how a receiver market in Ecuador gradually developed along with broadcast facilities. Williams directly assisted the development of HCJB's receiver program. As Jones's convert and close personal friend from Chicago, and as the pioneer radio engineer who hand built HCJB's first transmitter, Williams served as Jones's confidante and functioned as his technical consultant and sounding board. Williams's desire to proselytize and his enthusiasm for the evangelistic vehicle of radio surpassed even those of his mentor; his schemes to advance missionary work through radio reception closely mirrored, and at times anticipated, Jones's own ideas.

When he moved to Guyaquil in 1932, Williams's goal was to advance the gospel in Ecuador's major commercial center and port city through commercial broadcasting. In January 1933, Eric Williams set up his own radio "service, sound, [and] transmission business" in the *El Telegrafo* newspaper building in Guyaquil to finance his broadcast operation. Williams built "a couple of small transmitters for men who are broadcasting crazy" in the hope of later feeding them gospel transcriptions from his own central studio when they ran out of program material.⁴⁶ By the summer of 1933, Williams had begun transmitting with 50 watts. In August, he picked up morning and evening services from William Reed's evangelical church in Guyaquil – likely the first live church broadcasts in Ecuador, preceding those from HCJB in Quito. By September 1933, Williams had

upgraded to 200 watts. Working out of studios in the Palacio Municipal, Williams operated under the call letters HC2JB as the Ecuadoran Broadcasting Company (“La Voz del Litoral”) – the companion to “La Voz del Andes” (HCJB) in Quito. To win audiences and attract commercial sponsors, Williams included an array of broad, attractive cultural programming, including symphony performances, theatrical drama, children’s programs, sporting events, market quotations, and cooking lessons. To evangelize his audiences, he mixed in short, pithy gospel proclamations during popular programs, “smacking” his listeners “hard” by the simplicity and repetition of his messages. By August 1934, Williams had enjoyed enough success to hire two staff members.⁴⁷

Williams’s correspondence with his colleague Jones reveals the severe financial pressures involved in running gospel stations HCJB and HC2JB during the early 1930s. Jones and Williams utilized their monthly missionary support from the World Wide Christian Couriers at the Chicago Gospel Tabernacle to subsidize their broadcast ministries. As the Great Depression in the United States deepened, however, allowances from dwindled and monthly checks regularly bounced; the Courier’s bank, and eventually the Tabernacle itself, went bankrupt. To survive the loss of funds from America, Jones and Williams turned to Ecuadoran revenue from commercial sponsorships to sustain their stations. Though strictly speaking a non-commercial station under the terms of its government license, HCJB relied in its early years for as much as 40% of its total monthly income (and 75% of its Ecuadoran income) on “Commercial Programs” (that is, commercially sponsored programs), which station personnel had to regularly drum up.⁴⁸ In danger of going off the air, Jones had to mortgage the station’s transmitter in the summer of 1933 in order to pay a series of bills (including an electric bill for \$6.15).⁴⁹

Jones did not have the money to pay HCJB's electric bill and was forced to temporarily shut the station down. Williams relied on advertising revenue to keep his station going and contracted ad sales to Reed & Reed in return for half of his net profits (after salary).⁵⁰

Williams's experience testified to a slowly growing broadcast market in Ecuador's major commercial center and port city. "Everyone seems to want broadcast stations built," Williams wrote to Jones in January 1933.⁵¹ Most early enthusiasts operated on short-wave frequencies to the limited, wealthier audiences who possessed receivers. An opera afficionado, Dr. Albert Levi operated a short-wave 200-watt transmitter on 80 meters to advertise his chain of drug stores and promote classical music.⁵² Levi's brother-in-law Santiago Castillo, a wealthy and powerful Guayaquil businessman, negotiated a five-year broadcasting franchise with the Ecuadoran government on behalf of *El Telegrafo*, Ecuador's oldest newspaper (founded in 1884).⁵³ Following protracted partnership negotiations with Williams that eventually floundered over the issue of gospel programming, Castillo set up his own 300-watt transmitter by early 1934, which broadcast on both long-wave and shortwave.⁵⁴ Juan Behr, Williams's repair shop partner and station announcer, ran an independent low-power shortwave transmitter. The two men initially exchanged and re-broadcast each other's programs. When Behr established "Ecuador Radio" in 1934, however, he provided "hot" competition and the former associates became rival broadcasters.⁵⁵

As in the United States, crystal sets provided an early widespread means of reception in Guayaquil. Williams believed that numerous crystal sets existed in the city which picked up his station. Jones used a crystal set after first arriving in Ecuador. In November 1931, Jones imported a Scott tube set with shortwave reception that from the

United States. Jones singled out to his wife at home what a “joy” it was “to have loudspeaker reception” – an apparent rarity for him at the time. Jones did not keep the set, however, but gave it to Dr. Calisto.⁵⁶

Guyaquil’s expanding broadcast market witnessed a gradual rise in the number of radio sets as well as a change in their composition. In Williams’s view, the littoral region presented a more robust market opportunity for radios than the highlands, since coastal Indians were “much better off” and “most every hut” in Guyaquil possessed electric light.⁵⁷ Williams custom built long wave receivers and initially sold “cheap apparatus to the hams,” later expanding into crystal and tube sets.⁵⁸ When Williams formally launched HC2JB in September 1933, he gauged that a considerable unmet demand for radios still existed in Ecuador’s commercial capital: “here is a market ready, an [sic] no one with radios to supply them.”⁵⁹ The radio engineer reported that his major rival in the set repair business, a Senor Gahan, had launched into radio sales and began by importing twenty sets, all of which had been accounted for prior to arrival.⁶⁰

As broadcasting opportunities expanded, importers and businessmen in Guyaquil increasingly eyed the commercial receiver market. Castillo’s five-year contract with the Ecuadoran government included a valuable license to build sets.⁶¹ In addition to Reed & Reed, several major firms imported U.S.-made tube sets into Ecuador, including the American Trading Company, the Sociedad Continental, and agents for Philips, N.V. of Holland and RCA. Most imported sets came from the United States. Williams reported being impressed with the performance of Crane receivers and described government officials in Guyaquil charging one large importer with fraud for declaring the customs value of sets in New York, where they were evidently cheaper.⁶² Increased re-broadcasts

of programs from the United States and England by stations like Williams's further expanded the market for long wave sets. In December 1933, Williams wrote Jones that "Reeds and Lopez and Maulme [of the Sociedad Continental] continue to do good business selling radisos [sic] and there are now quite a number of long wave sets here in Guayaquil."⁶³ The expansion of Williams's service business testified to the increasing number of receivers in the port city. In early 1933, Williams began by servicing sets sold by Reed & Reed, as well as Albert Levy's ham sets.⁶⁴ Williams complained about Jones's numerous "boy builders" who had "messed up all the radio sets in town," which ended up back in Williams's shop for repairs.⁶⁵ By August 1934, following the expansion of the receiver market, Williams complained that radios "poured in" for service.⁶⁶

Based on his radio experience in Guayaquil, Williams concluded that long-wave coverage linked with cheap sets provided the best way to reach the masses of Ecuador. Williams and Jones clearly had a mass audience in mind: "...that is what we are after, radios to the masses." Reaching the masses required using inexpensive sets. In order to provide cheap sets, Williams recommended that missionary stations invest in local long wave service because it facilitated mass reception:

"There is no question, that for local coverage, long wave is going to be the best bet in Ecuador. From a stand point of cheap sets."⁶⁷

Supplemented by a good short-wave link to relay overseas programming, long-wave broadcasting provided "the Par excellence down here in Ecuador" since it would allow gospel stations to make the most extensive use of inexpensive receivers.⁶⁸

Williams's most ambitious project was to develop a national long-wave radio network in Ecuador, combining telecommunication, longwave transmitters, and cheap sets. Williams envisioned a national chain of low-power long-wave receiving stations

along the Guayaquil-Quito axis connected to public loudspeakers and succinctly described his vision to Jones: "... a wire line connecting our two stations directly and feeding 'either,' 'and,' 'or,' public address systems: single tube long wave transmitters of 10 watts at every little village or town up & down this great land."⁶⁹ Via local hook-ups and cheap receiving apparatus, such as crystal sets or public loudspeakers, Williams's network proposal offered a concrete way to distribute the gospel into the Ecuadoran interior. Williams grew excited at the thought of evangelicals penetrating into the Ecuadoran heartland: "Just think, its stupendous! Local service, cheap crystal sets in every locality of any decent size where there is current (110 v.) Kept under our control this could be of inestimable value to Ecuador."⁷⁰ One of the first conceptualizations of network broadcasting in Ecuador, Williams's proposal anticipated the All-Ecuador Gospel FM Network set up by HCJB in the 1950s.

Williams considered his network eminently feasible in the summer of 1934. He suggested Jones approach the national railroad in Quito to lease a pair of telephone lines that would link the two men's stations. Williams attempted to persuade Jones of the technical simplicity of the arrangement; Jones only needed "to rent, borrow or steal a line once a week for a start from the railroad," hook up a special line from the railroad office downtown to the national telephone company, and augment the station's feed with an amplifier.⁷¹ Williams encouraged Jones to take advantage of political contacts with Ecuadoran President Navarro and with the Director of Telegraphs in the capital. To persuade Jones, Williams highlighted the advantages which would accrue from his proposal. Such a network would allow HCJB and HC2JB to re-transmit each other's programs, producing "simultaneous broadcasts." It would provide national coverage for

HCJB and finally make Williams and Jones's vision of an "Ecuador Broadcasting Company" a genuine reality.⁷² Williams considered that simultaneous broadcasting offered a sure way for the two stations to recruit national advertisers and propagate their fundamentalist message: "It is the only solution to our problem commercially and Gospelly."⁷³ Despite Williams's repeated promptings, however, Jones took no action on the network proposal.

The Quito Radio Agency, 1933-34

In the summer of 1933, Jones shifted his receiver strategy from reliance on commercial importers to importing radio receivers directly himself. In July 1933, Jones established his own radio import business, the Quito Radio Agency. Jones registered the proprietorship with the city's mayor and received a business license to open a store as a merchant on the Palacio Municipal in downtown Quito with the purpose of selling radios.⁷⁴

A degree of confusion surrounds the origin, purpose, and effectiveness of Jones's radio business. It is not clear where Jones raised the start-up capital for his agency – a considerable sum of 20,000 sucres (roughly \$2,000) a tremendous amount for the penniless missionary that represented roughly double the station's monthly total revenues in 1934.⁷⁵ Swenson maintains that Jones did not originate the idea of an import agency, but instead was approached by an unnamed individual who proposed the idea and asked Jones to help; Jones agreed, using it both to increase his audience and to make money for his family living expenses.⁷⁶ Jones's over-riding purpose in establishing the Quito Radio Agency is unclear. "Peddling radios" provided much needed revenue to keep Jones's

family and HCJB afloat;⁷⁷ Jones reported to Rader in May 1934 that he derived “living and the support of the station” from the import and sale of radios.⁷⁸ Jones later wrote that the primary goal of his small enterprise was raising revenue for the station and that audience production was a by-product:

“... we had to take up the work of selling radio receivers to provide bread and butter in first year or two that we were in Quito. But, of course, this had the secondary value of increasing our radio audience at the same time...”⁷⁹

Frank Cook, the station’s first official chronicler, however, maintained precisely the converse; the radio import business acted as a “camouflage” to “hide the efforts of radio missionaries to ensure themselves of an audience,” which it succeeded in doing. In Cook’s view, the agency did not prove particularly profitable.⁸⁰

The confusion surrounding the purpose of the Quito Radio Agency is emblematic. Jones’s work overall blurred the line between money-making and evangelism. The hardship of Jones’s economic circumstance is attested to by the fact that he took on additional employment outside the station to supplement his income. Jones taught English in 1936 at the Academia Mejia (Mejia high school), the largest boy’s school in Ecuador. The National University in Quito also reportedly offered Jones its chair in English to replace John Reed. Jones also profited from his extensive musical background, providing music lessons at the national conservatory and directing the Quito Municipal Band.⁸¹ Jones used all his employment opportunities to extend the gospel. Worksheets in English classes contained Bible quotations every third line. Conservatory musicians performed over HCJB, while the station broadcast the city band one night a week live from the lawn of the Quinto Cornston, or city plaza.⁸²

Following the establishment of the Quito Radio Agency, Jones approached Williams in order to locate sets. He initially explored the possibility of importing radios directly from the United States. Williams utilized his contacts with the Institute of Radio Engineers in the United States to acquire price data on “the cheapest sets in USA,” obtaining catalogues from several American radio makers of “small, long wave sets,” which he forwarded to Jones.⁸³ Williams noted the keen competition and the wide variety of manufacturers in the American market from which Jones could choose. Overall, Williams suggested carefully balancing cost, quality, and market considerations in the choice of receivers. Williams distinguished between two markets in Ecuador: the “poorest class” who bought on price alone (“the best for least cost”) and the “better class,” for whom aesthetics matter and who needed “a classy looking job.”⁸⁴ Since the lower classes based purchasing decisions simply on price alone, Williams recommended importing the least costly sets consistent with basic acceptable quality. As examples of bargains, Williams cited the Goldentone radio and the Emerson model 755S, an all-wave model with cabinet and tubes for \$25.00.⁸⁵

Though he favored marketing small longwave tube sets overall, Williams’s “Pet Idea” was to import extremely inexpensive crystal sets, selling them with limited mark-up on a cash basis at minute profit margins. The sale of cheap sets would help to jump start the radio market in Guayaquil; in Williams’s estimation, they would “sell like hot cakes, and then everyone will get the craze.”⁸⁶ Despite their obvious limitations, crystal receivers at a price of just 40 sucres (roughly \$4) would serve as a stepping stone to introduce the idea of radio to the Ecuadoran public, expand listenership, and create openings for future sales of more expensive tube models. In short, such a project would

help to build “an audience which will become radio minded.”⁸⁷ Williams’s musing concurred strongly with Jones’s own leanings along the same lines.

Despite their enthusiasm to develop mass channels, however, technical and marketing considerations hampered Williams’s and Jones’s ability to sell cheap sets in Ecuador prior to 1945. A brief background helps to explain the difficulties which followed from the missionaries’ basic plan to couple inexpensive radios and long-wave reception. Long-wave transmission and cheap receivers worked effectively together. Because of the magnitude of their modulations, long-wave frequencies were the easiest radio signals to distinguish and could be picked up by the simplest and least expensive of detection devices, such as a crystal set. Along with their lower cost, however, long-wave sets had limited bandwidth and signal sensitivity. Because they required signals with large field strengths, such cheap sets generally had to operate within a close distance (less than 100 miles) of a transmitting station. Low-frequency (or long-wave) propagation traveled by line of sight along the earth’s surface, rather than by propagation off the ionosphere (as short waves did). Consequently, long-wave signals could be easily obstructed by features in the landscape, such as hills and mountains, and generally required open terrain to work best. Given these considerations, from a broadcaster’s perspective, long-wave sets made the most economic sense in high-density urban areas with large populations located close to the transmitting station. Use of long-wave in this social setting did possess a significant drawback, however. High density markets produced a greater likelihood of interfering signals from other stations, which cheap sets filtered poorly. In the long run, officials therefore had to decide between the cost and

quality of reception and between the size of potential audiences and the likelihood of invasive interference.

Understanding this technical background helps one appreciate the structural reasons why Williams and Jones found it hard to sell cheap sets. First, inexpensive long-wave sets (crystal or tube) had extremely narrow bandwidths and poor selectivity, which prevented them from picking up international broadcasts or distant stations. Since Williams's and Jones's sets only provided reception of a limited number of local stations, the two men would have to market receivers almost solely on price, convincing buyers that cost savings outweighed limited entertainment choice: "... in order to 'sell' the idea of listening to one station, the arguments in favor of buying this receiver will have to outweigh the fact that the receiver is dependent on my station only."⁸⁸ Possessing essentially a monopoly of the airwaves benefited missionaries as broadcasters, but made it more difficult for them to sell receivers. Along with marketing challenges, Williams and Jones both lacked the start-up capital to launch their project. Selling cheap radios on small profit margins put a financing burden on the seller, who had to carry considerable inventories and move larger amounts of stock to stake out profits. Lacking even \$100 to launch his campaign, Williams approached the Reed brothers and Jones unsuccessfully in search of backing, even offering Jones one-half of his gross sales receipts.⁸⁹ Jones himself lacked the funds to provide Williams or to launch HCJB's own proprietary low-cost receiver distribution program.

In addition to importing receivers directly from the United States, Jones also tried to become an agent for a radio manufacturer or import firm in Guayaquil. At Jones's request, Williams approached Maulme of the Sociedad Continental in the fall of 1933

about obtaining a dealership for radios manufactured by Philco (Philadelphia Storage Battery), one of the big three American set makers along with RCA and Zenith.⁹⁰ Maulme hesitated to provide the sets because he had been “bitten” before; he offered to do so only on a 90-day cash basis.⁹¹ Maulme latter expressed a willingness to give Jones an exclusive concession north of the city of Riobamba and to send Jones radios on consignment, provided Jones pay for his first set before receiving another.⁹² Relations with the Philips agent proved far chillier. Williams could not procure an agency for Jones or even a credit line for himself, since Philips would operate only on a cash basis.⁹³ However he obtained them, Jones reported to Williams by May 1934 that sales of Philcos in Quito were going well.⁹⁴ The Quito Radio Agency advertised in the capital’s leading newspaper, *El Comercio*, and published coupons for up to 50 sucres to encourage sales of radio merchandise, promoting only Philco brand sets by name.⁹⁵

In addition to importing sets, Jones explored the possibility of manufacturing receivers in Ecuador. As early as HCJB’s first broadcast in December 1931, Jones eyed the possibility of manufacturing receivers himself in order to lower set prices and increase the volume of sales.⁹⁶ In July 1933, he approached Williams with a proposal to start a Radio School in Ecuador with a view to building sets for the station. Insisting on an equal partnership in such a school, Williams recommended basic instruction in radio electronics components and circuit building, culminating in the “practical construction of types of tuned circuits” for simple crystal and single-tube receivers, carried out at the two men’s respective station sites. Williams recommended small classes of six students, who would supply their own materials, including batteries and headphones, from which they would build working models.

Despite its appeal, Williams discouraged Jones's manufacturing project. The radio engineer considered it would be cheaper for HCJB's principal to obtain set kits in the United States, since a viable manufacturing operation required in the radio engineer's view at least a \$2 profit margin on sets.⁹⁷ Following his research of the American receiver market, Williams advised Jones in early September 1933 that he could acquire "ready built" all-wave radios, comparable in performance to the "Crane" receiver, cheaper than he could build them using Williams's set design. Williams counseled Jones to search the American market before launching into production himself: "You can obtain something in the U.S. if you take the trouble to look for it." Williams cited two models, a four-tube longwave set kit (less tubes and cabinet) for \$5.00 and a 6-tube superhet kit for \$8, and suggested Jones could build cabinets for the sets in Ecuador, saving considerable expense.⁹⁸ Jones's and Williams's proposals to assemble sets using imported parts, local materials, and national labor, while never implemented during the 1930s, provided a blueprint which HCJB adopted in the postwar period.

It is unclear how successful Jones was in commercially importing radios into Ecuador through the Quito Radio Agency. Nonetheless, his efforts and his technical consultations with his former engineer Eric Williams elucidates the character of early missionary radio reception. Jones and Williams had primarily a mass, or lower-class, market in mind. To meet the demand of the lower classes, Williams suggested a blend of cheap crystal sets and small longwave sets, with marginal room to accommodate tinkerers who wanted to build their own sets. Given the limited competition on the radio dial in Ecuador, station organizers like Jones and Williams did not have to worry about losing their audiences when they sold cheap longwave receivers. Instead, they faced the

reverse problem of marketing sets that in practical terms could only pick up their stations. Jones's and Williams's inability to mount a large-scale campaign to market low-cost imported American radio receivers during the 1930s revealed their Achilles' heel: their critical lack of capital funds. Notwithstanding (or perhaps because of this), Williams clearly indicated that, while building radio audiences in Ecuador remained the Americans' primary objective, the need to raise support and the profit incentive remained important motivations as well. Williams suggested mark-ups as high as 50% on imported sets and a minimum profit margin on manufactured sets. The two Americans thus did not operate in a spiritual "vacuum." Instead, they defined their spiritual mission to convert the masses in concrete and practical terms, intertwining it with the more mundane everyday business of money-making and ensuring the overall commercial viability of their larger enterprises.

Jones's and Williams's experience with the Quito Radio Agency demonstrated valuable lessons about the business of radio reception. Running a radio import business required deciding the agency's primary purpose – making money or increasing audiences for the twin American-run stations. This decision in turn meant making difficult trade-offs between profitability and the size and composition of audiences, since only the well-to-do could afford more expensive (and profitable) sets. Large profit margins did not exist in the larger lower-class market earmarked by the station for its mass audience. If an organization was going to "capture" this radio market, it would require strong non-commercial incentives to do so. Missionary broadcasters such as HCJB would continue to face difficult choices between target audience, audience size, and profitability throughout the postwar period, with important technological implications.

“Fishing for Souls:” Radio Circle, 1934-45

In the summer of 1934, Jones reached a turning point in his efforts to promote reception of HCJB. Upon arriving in Ecuador, HCJB had concerned itself with the immediate task of setting up a station and sending out broadcasts. Jones had entrusted the second half of his initial radio vision concerning receivers to Christian & Missionary Alliance (C&MA) missionaries, relying on them distribute radio sets in villages while HCJB transmitted programs. After three years spent in importing radios into Quito, Jones increasingly questioned the station’s failure to penetrate beyond Ecuador’s two major cities into its remote rural areas, including the sierra and Amazonian jungle. Jones realized that C&MA personnel had not done their part. Writing to Paul Rader, he confided his mounting disappointment with the missionary organization: “I am waking up to the fact that that we are *not* reaching out in this second and most vital part of our vision for many reasons.” Jones critiqued the traditional missionary methods evangelicals had adopted in Ecuador, which had produced little results in the country after three decades: “After 30 years of hard sweat and sacrifice, there are the merest handful of so-called believers who look to me more like overfed bottlebabies that come to church regularly to be stuffed.”⁹⁹

Despite his chagrin, Jones resolved typically to take fresh action. He focused his interest on missionary radio reception: “...we are certain that some definite move on our part towards the accomplishment of the “receiving end” of the set-up must be started.” Jones conceived of contacting remote areas with the evangelical gospel by allying the use of receiver technology and national personnel. Jones recommended conducting a survey of “out-of-the-way villages” in Ecuador that had previously been untouched by

missionaries. In these locations, missionaries would single out one or two individuals that could be “reached by personal evangelism” and leaving them with a receiver which would allow them to contact Quito “daily for spiritual food and evangelistic messages.” Jones suggested that a “traveling native evangelist-radio repairman” could then make follow-up rounds to look after sets and encourage these local groups, who would otherwise have to “sink or swim” by themselves. Overall, Jones considered that “the self-controlled native group” represented the only way forward for evangelical missions in Ecuador, since North Americans simply lacked the field personnel to evangelize and pastor native churches.¹⁰⁰ Jones special contribution to the indigenous question was to incorporate the use of radio receivers, which would assist church growth in otherwise inaccessible areas by providing regular evangelism and spiritual discipleship over the air. In Jones’s vision, radio would extend the visible community of faith across cultural lines and in multi-directional ways, enabling local Christians while simultaneously magnifying the influence of the foreign church with whom it was linked.

By July 1934, Jones had formulated a concrete plan to purchase small, long-wave receivers and place them in the homes of national Christians. He communicated the idea to Eric Williams in Guayaquil, who considered the proposal “splendid.” Williams replied that this had been his aim all along and that he had in fact developed a comparable approach on his own over the previous several months. Williams planned to begin immediately placing sets in homes in Guayaquil on Sundays to pick up the services of “Father Reed” and Sunday school lessons from the Templo. Williams had shared his proposal with the Reed brothers, partly in the vain hope of raising funds to obtain receivers. Williams recapitulated how broadcast conditions in Ecuador posed an obvious

advantage for missionary stations: “we are excellently set up for this Clar, since they can’t tune in any other station! on long wave.”¹⁰¹ Two weeks later, Williams wrote Jones even more enthusiastically, confirming that the “... the Radio Circle Idea is an excellent one.” Williams claimed that the idea of the Radio Circle vindicated the two missionaries’ initial vision for radio reception: “Remember, these were our original ideas when we planned, four years ago, to put receivers out among the people.”¹⁰² Aligning themselves with national Christians who would proselytize their compatriots in their own homes would allow evangelical missionaries to achieve their main purpose - to “smack them HARD with the Gosple [sic], by one of THEIR OWN FOLKS, in SIMPLE SIMPLE SIMPLE language.”¹⁰³

HCJB gradually learned it would have to develop its receiver vision without the support of other mission agencies. Jones’s confidence in the C&MA was buoyed in October 1934 when C&MA missionaries voted at their annual field conference to form a “special Radio Committee.” Jones considered the move a “real push forward in Gospel Radio for South America,” since, in his view, the committee would seriously seek to “develop their part of the work with us in a manner not attempted so far.”¹⁰⁴ In the long run, however, the field decision proved a temporary resuscitation. Seven months later, Reuben Larson wrote to C&MA’s Foreign Department in New York City, citing the station’s “lack of adequate financial support” and requesting permission for the time to solicit funding in the United States for the new receiver project.¹⁰⁵ The direct response to Larson’s request is not known, but it appears that headquarters sent HCJB’s leaders mixed signals. C&MA officials did give Larson and D.S. Clark the authorization to solicit moneys for the station’s new transmitter, but they turned down Larson’s request

for C&MA missionaries to raise funds for special purposes, such as the receiver program, through the use of personal pledge cards, preferring that personnel sever all public ties to the C&MA in their fund-raising efforts.¹⁰⁶

Jones's break with the C&MA, added to his experiences in importing commercial radios, produced a new receiver vision – the Radio Circle. An experimental project to build audiences, the core of the Radio Circle idea involved creating a pool of low-cost receivers for distribution to less affluent Ecuadorans who could not afford to buy American radio sets.¹⁰⁷ HCJB procured sets in the United States, with funds donated by American supporters and then loaned these receivers to strategically located Ecuadoran nationals sympathetic to the station. These Ecuadoran collaborators tuned in HCJB's gospel programs, drawing neighbors and "invited guests" from surrounding areas into their homes. By utilizing North American funds, engaging Ecuadoran nationals, and employing communal listening, the Radio Circle directly addressed HCJB's shortage of receiver capital and maximized usage of the station's limited resources.

HCJB's effort to organize listeners demonstrated that radio communities had both visible as well as invisible components.¹⁰⁸ Jones adopted the title for the new listener organization from a popular Spanish-language gospel program on HCJB ("circulo de radio") which encouraged listeners to "join the Radio Circle." The notion of a circle connoted both a sense of completion and inclusion and implied an element of exclusivity; participants entered into the station's extended family. Members of the Radio Circle consisted primarily of three groups linked together by the station – "friends" in the U.S., national partners, and Ecuadoran listener guests. Sets (or the funds provided for them) were given twice – once by donors to the station and once by the station to Ecuadoran

nationals – tying American supporters, HCJB officials, host families, and listeners together in a loose-knit real-world radio community. Station officials encouraged its American entourage to become actively involved in the life of the station by paying and praying for a radio receiver. Such solicitations left their material traces; the station recorded the names of individual donors, linking them to specific sets and particular native families.

Components of the Radio Circle became standard elements of receiver programs among missionary broadcasters in the postwar period. Placement of sets was a key variable. Officials described set locations as “strategic points” and used terms such as “outposts,” “listening posts,” and “interceptors” to describe Radio Circle receivers, connoting a chain of proto-military communication. Strategic receiver sites included points of communal access in the public square as well as the domiciles of native supporters and receptive neighborhoods.¹⁰⁹ While most Radio Circle sets ended up in homes, the station placed several in “special places,” such as the Blind School in Quito and the city jail.¹¹⁰

The success of the Radio Circle rested largely on the careful selection and training of set borrowers. Sets were loaned only to “responsible national believers” who “supervised” the extension of the Radio Circle.¹¹¹ The station considered it an honor and privilege to be selected to receive a set; the shortage of radios among the lower-class Ecuadorans (which resulted in a waiting list for HCJB receivers) made it more likely that this group would share the station’s view. Reuben Larson compared the role of listening post to that of a “chasquis” – royal Incan couriers or posts who were “selected and trained for their speed and fidelity” and bore distinctive livery (a thread of the crimson fringe

worn around the temples of the Incan chief).¹¹² The station relied on these “national Christian helpers” to use the units of the Radio Circle “strictly for Gospel purposes.”¹¹³ To ensure this, the station instructed borrowers in “tuning for our programs” and in how to use sets correctly.¹¹⁴

The Radio Circle depended on money donated by American evangelical churchgoers. Jones’s decision to solicit funds from the United States partly addressed HCJB’s endemic lack of capital, allowing the station to distribute sets to lower-income households who could not afford them. American donors included individuals, church groups (such as Bible studies, Sunday School classes, and youth groups), and entire congregations. HCJB referred to these sponsors as “friends” and appealed to them regularly in station publicity: “Consecrated friends of missionary vision, in the homeland, have made possible the possession of these “listening boxes” by those who could not otherwise have had them.”¹¹⁵

HCJB closely connected the donation of receivers with control of listening habits. Concerning the financing of station radios, HCJB’s decision-makers had three basic options. They could have used American funds to sell, give, or loan receivers to Ecuadoran Christians. Loaning sets, as opposed to selling them or giving them, allowed HCJB to retain a greater degree of control over set usage. Before the advent of pretuning, the station’s loan policy represented its principal mechanism of controlling listener usage: “If HCJB owned the radios, they could exercise some control over them and demand certain listening habits from those who had them in their homes.”¹¹⁶ By turning the set on and off at proper times, Radio Circle hosts could ensure that the receiver was utilized solely for spreading the gospel and not for entertainment *per se*.

Proper “stewardship” or use of the radio was a central concern of station officials. Ensuring that host families used sets appropriately in turn proved an important warrant for financial supporters in the United States, who wanted assurance that their donation went to missionary work and did not lead listeners astray into worldly temptations. Since numerous sets distributed by HCJB’s Radio Circle had all-wave reception, allowing them to pick up regional and foreign broadcasts, “misuse” of sets by Ecuadoran nationals represented a concrete possibility before 1945. As the broadcasting environment in Ecuador matured, listeners acquired even greater choices on the radio dial. Faced with an expanded radio market in Ecuador, Jones and HCJB’s directors after 1945 would embrace a more radical, technical solution to ensure listener fidelity.

The explicit purpose of the Radio Circle’s was “fishing for souls.” In Jones’s estimation, the Radio Circle existed to attract individuals who would otherwise remain outside the evangelical purview: “The only objective of this work is “fishing for souls” to be done in the natural home atmosphere by national brethren amongst people who might never come to a Gospel service.”¹¹⁷ As bait to draw in such listeners, station organizers endeavored to take advantage of two “natural” assets: the “entertainment value of radio reception” and the “natural atmosphere” produced in the home. Unlike radio listening in the industrial West during this period, Radio Circle evangelism was a decidedly social process. Radio Circle members invited friends and neighbors into their homes to “enjoy” HCJB’s programs,” which they experienced together as entire households. Anecdotal evidence indicates that these numbers could be quite large; one zealous tailor crammed 65 neighbors into his small home, while another cotton mill worker included all the children in his village for the program “Sunday School of the Air” (Escuela Dominical

del Air).¹¹⁸ Station publicity promoted Ecuadoran families as typical Radio Circle hosts, showing photographs of the Naranjo and Padilla households, with seven and eight members, respectively, standing by their receivers. Not only did communal listening among national believers maximize the station's scarce technical resources, but it also produced a positive public validation of HCJB as well, since it implied a widespread acceptance of the station.

The national host of the Radio Circle performed several important evangelistic functions, bridging the technical and spiritual domains. In addition to operating the receiver and properly tuning in to HCJB, the Radio Circle member acted as station intermediary. During programs which contained an explicit gospel proclamation, the host's task was to draw his audience's attention to the spiritual message. In the case of a musical or cultural presentation, such as the "Sunday School of the Air" (which presented biblical passages set to music), the on-site interlocutor had to give voice to the gospel by audibly articulating its claims to his listeners.¹¹⁹ The station considered "follow-up" work as important as a task for national Christians as "manning" receivers. Immediately after HCJB's gospel program ended, the national turned off the receiver and went "on duty" by "tactfully and prayerfully" carrying on the work of personal evangelism, which included the distribution of literature to listener guests, including Bible tracts.¹²⁰

Despite its promise, the Radio Circle operated on a small scale prior to 1945. Personal records maintained by Jones in a notebook during 1936 give a sense of the size and feel of the receiver operation. Judging from the results of a 1945 survey conducted by the station, financial support for HCJB and for the Radio Circle came overwhelmingly from Baptist and Independent (Fundamental) groups and churches.¹²¹ Jones had two

principal sources of funds for the Radio Circle, which acted as clearing-houses for further donors: C.L. Eicher, a former colleague at the Chicago Gospel Tabernacle and now affiliated with the interdenominational World Wide Prayer and Missionary Union (WWPMU) in Chicago, and L.H. Zeimer of the Toledo Gospel Tabernacle. Eicher and Zeimer were among the largest financial supporters of HCJB; over a six-month period in the winter of 1936-37, WWPMU gave the station nearly \$1,500 - almost one-third of HCJB's total expenditures during the period and the equivalent of three months of the station's monthly budget in 1934 of roughly \$400.¹²² From September to November 1936 (the period recorded in his ledger), the Radio Circle received over \$300 from Eicher, on behalf of several identified donors, including the Read family, Simon Bos, and Tillie Fisher, while Zeimer contributed an additional \$35.¹²³ Other known Radio Circle sponsors in 1937 included a Men's Bible Class in Minneapolis, which paid for a set installed in a remote area of the Andes mountains.¹²⁴ Over the following six-month period, Eicher and Ziemer each provided HCJB with several radio sets for use by the Radio Circle. In all, over the six month period from October 1936 to April 1937, the Radio Circle received roughly \$140 in contributions (more than 5% of station's total receipts) and spent nearly \$100 on radios, enough to purchase three or four sets.

Jones's records afford a detailed look at Radio Circle sets. Jones used the nearly \$300 received in September and October from donors in the United States to purchase seven "radio outposts," including four long-wave receivers and at least one all-wave set. Jones purchased tabletop models with "cathedral" and "tombstone" designs from a wide range of American manufacturers, including Halson, Knight, DeWald, Postal, Stewart Warner, Coleman, and Lafayette, for prices ranging from \$25 to \$35 per set. Overall,

more than half the sets on the Radio Circle's books were long-wave, with the remainder all-wave. Sets ranged in size from four to eleven tubes, with roughly half the station's inventory in the smallest overall category of four tubes. While his records do not indicate whether sets were AC or battery-powered, the price of the sets makes it likely they were battery-powered, despite the lack of mention of battery costs in Jones's records.¹²⁵ Jones probably acquired Radio Circle receivers through the simplest route available to him in 1936 – commercial importers in Guayaquil. Jones indicated purchasing two of the receivers from Reed & Reed and a third (the “American”) from the American Trading Company. Jones also noted regularly purchasing parts to service the station's receivers, including tubes and voltage adjusters, indicating that set maintenance was an ongoing concern and a continual expense for the station. Since some receivers cost as much to repair (\$25-\$30) as they did to buy, continued ownership of sets could amount to a considerable liability.

Jones's notebook provides a brief inside glimpse of who received Radio Circle sets. Within three days of their purchase, Jones had begun placing his sets in Ecuadoran homes; within a brief two-month period, he had found locations for seven receivers. His records indicate the names of eight different borrowers, all of them male.¹ At least one of these individuals, Jose R. Naranjo, represented an extended family of seven members who were cited in publicity. Jones records provided the names of Ecuadoran borrowers who used specific sets; Jones's book also traced these same sets back to their original American donors. Sponsors in the United States could therefore be directly linked to

¹ Eloy Moran, Juan Hernandez, Juan Ordonez, Gonzalo Maldonado, Trajano Recaldes, Jose M. Cabezas, Joe Barragan, and Jose R. Naranjo

Ecuadoran homes via the receiving hardware they financed, completing a North-South American Radio Circle writ large.

From 1936 to 1945, the Radio Circle experienced only modest growth. Following Jones's condensed spate of purchasing and placement activity in the fall of 1936, his record book indicated that by November the station had eight sets loaned out, with two in stock.¹²⁶ By August 1937, the number had risen to fifteen "lighthouses of truth" in all Ecuador.¹²⁷ Officials placed sets in "some seven centers in Quito," as well as in Ipiales, Alausi, and remote areas of the Andes mountains.¹²⁸ In September 1939, the Radio Circle received its first full-time staff member - Harold Hoeflinger, a new missionary-radio repairman from the Fort Wayne Gospel Temple. Hoeflinger had taken a special course in radio service and intended to monitor the station's receiver program, using a small truck to make "numberless visits for installation of receivers, instruction, reports, etc., with "Circle" members." As importantly, the Texas emissary brought funds for thirty new radios.¹²⁹ By 1945, Jones claimed that the number of Radio Circle receivers had increased to approximately fifty.¹³⁰

Along with the gradual expansion of its receiver program, HCJB's directors moved to develop its local radio service, vindicating Eric Williams's vision of radio for the masses. Jones first proposed adding longwave service in July 1934 at the time he implemented the Radio Circle, although it took three years to carry out his idea.¹³¹ When the station added its new 1 Kw transmitter in the summer of 1937, it added a longwave service (308 meters) on 50 watts, which was expressly intended "for the local listeners of Quito."¹³² (The station's original transmitter, which was intended to reach the entire Republic, operated on 50 meters, or "tropical shortwave.") Station personnel publicly tied

the implementation of longwave with the station's receiver ministry; according to the HCJB's sixth year anniversary brochure, longwave provided "a valuable service for the small, inexpensive receivers that can only tune the longwave band, as the 'Radio Circle'."¹³³

The viability of the Radio Circle rested in large part on selling the program to supporters in the United States. The need for American support influenced how the program was organized and packaged. Program publicity sold the Radio Circle on its evangelistic merits, magnifying the spiritual significance and strategic scope of the ministry while minimizing its limited size. "Every day," one brochure proclaimed in 1941, "the message gleams forth, enlightening the darkness and is intercepted by the encircling chain of listening posts."¹³⁴ Officials did not usually specify the exact extent of Radio Circle operations in early public literature, claiming simply that the station had "distributed receivers around the country" which functioned "as 'listening posts' for the Gospel from Station HCJB."¹³⁵ The implication was that the tactical importance of the chain of receiver fortifications outweighed their small number, since outposts acted as sentinels and kept watch over the country. Officials also emphasized the unique value of "domestic evangelism," playing up the reliability and effectiveness of national believers; "interested friends" would use receivers, officials maintained, "to tune in the Gospel programs of HCJB so that neighbors and invited guests can join the family in 'listening in.'"¹³⁶ The station employed photographs in promotional literature to convey the immediacy and legitimacy of its enterprise. The representation of Ecuadoran families with small children, gathered in their homes around the receiving set, stood as a trope for the overall inclusiveness of the Radio Circle community and signified metonymically the

acceptance of HCJB by national believers, who clearly “bought into” the receiver program.

It should be borne in mind that listening to HCJB required real effort for HCJB’s American audiences. Short-wave broadcasting presented far more vagaries, and far less certainty, than the standard AM broadcast band. As a result, reception of HCJB’s missionary programs in the United States posed a far more arduous challenge for evangelical listeners than the American religious programs to which they had grown accustomed. The fact that HCJB broadcast on three short-wave bands (31, 24, and 19 meters), and that reception conditions varied considerably from day-time to night-time as well as between seasons, made tuning in the missionary station in America and remaining connected over the air more arduous still. Finally, time-zone differences further complicated the matter of long-distance international listening on short-wave. Picking up HCJB on shortwave required sufficient skill (and was sufficiently important to the station) that officials constantly reviewed the topic in publicity. To ensure reception, officials advised American listeners in the simplest terms possible to follow basic four-fold procedures, verifying that their sets included a short-wave dial, that their band-switch dial was properly turned to short-wave, that they selected the correct program time, and they turned the short-wave dial slowly to pick up HCJB.¹³⁷

“Selling” the Radio Circle in America involved acquiring both ideological legitimization as well as practical financing for the receiver program. The Radio Circle ministry offered American evangelicals an intimate, direct entrée into the heart of the mission field: the foreign home. Officials encouraged church groups, ranging from Bible study and Young People’s groups to Sunday School classes, to “back” the Radio Circle

ministry by getting directly involved in the program, arguing that “friends” in America could equally play the role of “chasquis” via their prayers and payments. In 1940, station officials formalized the link between American donors and HCJB’s national Christian partners, encouraging “interested friends” in the United States to “install” a battery receiver (or two electric sets) in an Ecuadoran home for the cost of \$30; sets would bear the name of the American donor.¹³⁸ The practice of sponsoring sets to raise money, pioneered by HCJB, would become common practice among missionary broadcasters in the second half of the twentieth century.

Conclusion

Designing Capture

By 1945, the Ecuadoran and Latin American radio markets had expanded considerably from their modest origins in the 1920s. In 1941, the CMA’s monthly publication, *The Alliance Weekly*, reported that that “thousands of cheap sets are sold in every part of that continent,” portraying the period as a “time of great opportunity” for missionary broadcasters since South American listeners would now begin to turn en masse to American-sponsored religious programs, such as Charles Fuller’s *Old Fashioned Revival Hour*.¹³⁹ By late 1945, Jones estimated that 20,000 sets existed in Ecuador and 4 to 6 million in Latin America.¹⁴⁰ By the end of WWII, as Jones had predicted, Ecuador had in fact become “radio minded.”

HCJB officials accorded the Radio Circle a role in the growth of a receiver market in Ecuador. Understandably, HCJB officials made fairly rosy assessments of the importance and effectiveness of their receiver initiative, since the success of the program was critical to obtaining money from the American public. Yet the manner in which they

did so, emphasizing the qualitative significance of the program over its quantitative aspects, was telling. In July 1937, the station maintained in publicity that “definite happy results” were occurring, without spelling out the nature or extent of those results.¹⁴¹ In his annual 1936-37 report to C&MA missionaries, field chairman D.S. Clark offered a more confidential (and perhaps reliable) judgment, noting that HCJB was “now seeing definite results.” Again, however, Clark did not offer hard measurements. Writing in 1945, Jones maintained that the Radio Circle had introduced the idea of radio into many Ecuadoran homes and helped the nation to become “radio-minded,” paving the way for commercial radio agents.¹⁴² Jones’s general observation was broadly tenable precisely because it failed to provide any specific detail with which to evaluate the strength of its claim, if such a calculation were even possible.

Despite the claims of HCJB officials, the quantitative contribution of the Radio Circle to the expansion of radio in Ecuador, much less in Latin America, was clearly small, even miniscule. Yet a focus on numbers alone should not preclude appreciating the larger significance of the Radio Circle, clearer from the vantage point of history. This belonged principally in two areas. First, the design of the Radio Circle illustrates the pragmatic and opportunistic spirit invigorating the evangelical missionary radio enterprise. Building on its pioneering innovations, the Radio Circle provided a practical template for missionary radio reception, which became the *de facto* paradigm for receiver distribution programs during the significant expansion of missionary broadcasting in the postwar period. Second, the inner workings of the Radio Circle illuminate the mechanism of capture and the nature of audience relations which lay at the heart of HCJB’s activities prior to 1970. Understanding the genesis and *modus operandi* of the Radio Circle sheds

valuable light on the motives and methods underlying the evangelical project to convert the world through radio. The two areas – innovation and capture – were of course intimately related, since the former represented the means and the latter the end of missionary broadcasting.

The Radio Circle pioneered the field of missionary radio reception. Adopted by on a widespread basis by missionary stations after WWII, Radio Circle innovations accrued significant benefits to evangelical American broadcasters, while raising new challenges. First and foremost, the Radio Circle typified the activist approach to creating audiences adopted by missionary radio stations. Jones and Williams were not content to wait for commercial radio markets to materialize in less developed countries, but steadfastly maintained that the missionary broadcaster had an obligation to use the tools at his disposal to make receivers widely available, particularly to the poorer classes. “We all recognize,” Jones wrote in late 1944, “what an essential matter it is for us *to produce as many listeners as possible for the Gospel*, and therefore, it seems to me *we must bear in mind the increasing of the specified radio audience which we know is listening to our programs*, especially from the Gospel angle.”¹⁴³ (emphasis added) Jones and Williams’s actions from 1931 to 1945 consistently put this imperative into practice.

The efforts of radio missionaries to increase receiver supplies between 1930 and 1934 typified the pragmatic, experimental approach to radio reception taken by missionary broadcasters. While pressing to expand receiver facilities, evangelical broadcasters took advantage of prevailing reception conditions to propagate the gospel. Upon arrival in 1931, radio missionaries capitalized upon the scarcity of radios in Ecuador, particularly in remote jungle areas, to evangelize, linking the technical and

spiritual mystery of radio reception. From 1931 to 1934, Jones, Williams and HCJB explored a range of methods to expand radios, including reliance on commercial distributors, direct importing of sets, and the manufacturing or assembling of sets from imported parts, using national labor trained by missionaries. Missionary broadcasters would employ all of these methods during the postwar period in an attempt to address the ongoing “receiver problem” – the endemic shortage of radios in many parts of the developing world.

Beginning in 1934, the Radio Circle innovated a *social* solution to the problem of receiver shortage in developing countries. Faced with a lack of receivers in Ecuador and of equipment capital, Jones turned the traditional social convention of communal listening into an asset for the station. Whether in the public square (such as jails or blind schools) or private homes, group listening enlarged HCJB’s audience, increased resource utilization, and expanded exposure for the foreign missionary station. Until the advent of a strong commercial market for transistor radios in the 1960s, all missionary broadcasters in developing countries would emulate HCJB’s example by developing socialized listening programs, which significantly multiplied the number of listeners per set.

The Radio Circle’s strategy of enrolling national Christians, who were not themselves trained missionaries, to serve as centers for distributing the gospel by radio to their own people was also immensely significant. The direct use of national Christians in the reception process, spearheaded by the Radio Circle, presented several advantages to HCJB and to the larger American evangelical missionary enterprise. Collaboration with nationals via radio magnified the local character of missionary communication. Placing receivers in the hands of native believers reduced the ostensible direct outside influence

of the evangelical church, since national Christians now oversaw the proclamation of the gospel message. “Missionary radio evangelism” de-institutionalized the influence of the evangelical church, as no over-arching church structure or locality supervised evangelization or follow-up. Preaching the gospel in a domestic environment, by invitation of neighbors, offered tremendous legitimization for American evangelical religion; evangelicals were perceived less as foreign Protestant “gringos” and more in the guise of familiar neighborhood faces. Eric Williams rightly tied the effectiveness of radio evangelism in a missionary setting to radio’s “penetrative power,” which allowed evangelicals to move from the public square, where they were frequently shunned, into the privacy of the living room, where they were given a ready audience:

“My, Clar, what a mighty power we have with the radio, there is no doubting, nor gainsaying its penetrative powers into the homes of Ecuador. Its influence will have effect on many hearts, and many thinking men of Ecuador.”¹⁴⁴

As C&MA field director D.S. Clark observed, the Radio Circle represented one of the few, if only, avenues open to American missionaries in Ecuador to evangelize groups down the economic scale. Clark commended the receiver outreach as an “avenue of service which reaches a class that through ordinary evangelistic effort we can never reach.”¹⁴⁵ The Radio Circle reached these lower-class groups in the intimacy of their homes.

By consciously targeting the lower classes, the Radio Circle set an important standard for future missionary broadcasters. The radio ministry demonstrated the feasibility of evangelizing groups with lower economic status via radio through collaboration with national partners. More importantly, the publicity associated with

Jones's work established the *prima facie* imperative that missionary broadcasters should cater first and foremost to the less privileged. Henceforth, the question for American evangelical stations overseas became not whether, but how to contact poorer audiences, which became radio missionaries' primary target. Missionary stations targeted the poor for several reasons. First, the poor traditionally offered greater openness to the gospel. Second, national and international government broadcasters tended to overlook poorer audiences because of their lack of political influence and reception facilities. Finally, the material deprivation of less prosperous groups made them more reliant on missionary stations for sets, which augmented the opportunity for station control over their listening habits.

The Radio Circle's method of financing represented a crucial innovation in the field of missionary reception. The use of assets provided by North American Christians in North America to fund receiver operations in the developing world represented a novel departure for missionary broadcasters and agencies alike. American funding of missionary radio reception, of course, had important historical precedents and came with its own peculiar price tag. The prior development of radio in the United States conditioned the success of the Radio Circle abroad in two ways. First, financial support for Jones's vision assumed the prior positive exposure of supporters to radio revivalism in the homeland during the 1920s. Second, the Radio Circle presumed a supply of low-cost, standardized, factory-built sets for import into Ecuador, which the maturation of the American radio market by the mid-1930s alone made possible. Reliance on American funding, made possible by the more advanced development of the "homeland" market, in turn placed additional pressure on missionary broadcasters to maintain highly favorable

public relations in the United States, problematizing the question of who made up the station's primary audience.

American funding made possible one final innovation for HCJB – receiver lending. Offering sets on a loan basis provided a way around the lack of disposable income for receivers among the Ecuadoran lower classes. Loaning sets to foreign nationals, however, raised its own problems, as missionary broadcasters would discover during the postwar period. Lack of ownership frequently meant lack of proper stewardship from the station's perspective. Set borrowers, who had no capital invested in their receivers, frequently took poor care of sets, resulting frequently in costly repairs for the station. A loan policy, which subsidized sets, also failed to address the long-term structural problem in the Ecuadoran radio market, namely the high relative costs of sets. Jones failed to perceive that stimulating demand only resolved one half of the receiver market problem. The long-term solution would have to lie to a large degree on the supply side by reducing the cost of sets and making a mass consumer global market possible.

Officials geared the Radio Circle's social and technical innovations to a particular cultural end. Jones envisioned the Radio Circle primarily as a means of controlled audience expansion. By closely regulating the usage of receivers, the station sought to ensure strict results, namely religious conversion. In the Radio Circle, capture rested on cooperation by national partners. Station officials relied on nationals to "tune" sets both technically and spiritually, as Jones mandated. Nationals conducted reception, ordered exactly when sets were turned on and off, limited reception to gospel-related broadcasts, and carried out the all-important business of evangelization, following up programs with direct proselytizing. In short, nationals used receivers for the sole purpose of winning

souls. By increasing HCJB's dependence on foreign labor, HCJB's experience of the Radio Circle also illustrated the vulnerabilities of social forms of listener control. Writing in 1945, Jones considered that the "human element" proved the "great and unknown factor" in the receiver plan, implying that HCJB's national partners had proven at least partly unreliable.¹⁴⁶ In the postwar period, along with the increase in broadcasting stations in Ecuador, HCJB shifted its attention to a different, technical strategy of capture in order to expand its audiences while reducing reliance on fallible human agents.

The Radio Circle's architecture made it clear that closed environments (or markets) were critical to the function of capture. Officials installed receivers in public places, such as the city jail or school for the blind, or in private settings, such as individual homes, which provided highly restricted access to alternative media or sources of information. As a 1937 publicity brochure claimed, listening posts "provoke personal evangelism in connection with radio among an assured audience."¹⁴⁷ By inviting listeners into the homes of sympathetic supporters, station officials effectively provided themselves with a comfortable, captive, small-scale missionary public.

Finally, HCJB's early experience demonstrated that listener capture was closely tied to the scarcity of receivers in the mission field. A brief anecdote, recounted by Jones, illustrates succinctly how HCJB missionaries utilized the novelty of radio imaginatively to capture listeners. In HCJB's early years, when few radios existed in Ecuador, D.S. Clark organized a trip to evangelize a new tribe of Quechua-speaking Indians located in eastern Ecuador at the head of the Amazon river. This particular Amazonian tribe feared white men as a result of early mistreatment at the hands of white gold hunters. In preparation for his trek, Clark located a battery receiver and arranged for HCJB to

broadcast a special program in Quechua several weeks later at an appointed day and hour. After many days, Clark's party finally arrived in the Indians' territory. As the Indians watched suspiciously from their huts, Clark and his men staged a small performance with their radio to pique the curiosity of the Indians, placing the set on a stump, stringing up the aerial, connecting the battery, and "manipulating the dial." Finally, capping the show, an announcer in English came magically over the air, greeting Clark and his party by name and indicating that a special program had been prepared for Clark's audience. Then, after a brief Spanish announcement, HCJB transmitted its specially prepared Quechua broadcast: "miracle of miracles, the box began to talk in their [the Indians'] own tongue!" According to Jones's account, the Indians' curiosity overcame their suspicion and self-restraint, and they approached the party. Listening attentively in silence to the broadcast, they broke out in "admiring exclamations." The wonder of electromagnetic communication succeeded in breaking down natural hostility to the evangelicos' message, capturing an audience for the missionaries:

"Who had ever seen or heard of such a thing? The little black magic box talked and sang! *They were completely captivated. From there on, the missionary had an open door thru which to reach that group with the gospel.*" (emphasis added)¹⁴⁸

In Jones's estimation, Clark took "legitimate" advantage of the "element of surprise and curiosity" to capture the Indians' attention, reduce their animosity, let down their guards, and open their souls to the gospel. Clark's experience suggests in a nutshell a positive correlation between the shortage of available receivers and the degree of audience captivity.

Overall, the distinctiveness of the Radio Circle consisted in its hybrid character, blending innovation and control. The Radio Circle fused widely diverse national publics

and heterogonous technical and cultural elements in a single organized attempt at radio capture. The Radio Circle's national identity raised interesting questions. Poised between its "friends" in the United States, who considered the program a missionary outreach, and its "friends" in Ecuador, for whom the effort represented an indigenous endeavor, the Radio Circle maintained a Janus-like existence. The Radio Circle's Ecuadoran radio ministry was at the same time quintessentially American. Reliance on national Christians for evangelism was only made possible by dependence on the North American church for money. Indeed, the Radio Circle could be rightly construed as an American ministry, which augmented the leverage of the conservative Protestant church in the United States by extending its influence into Ecuadoran homes. The Radio Circle's mode of technical communication similarly bridged gaps between two cultural universes. Paradoxically, HCJB officials characterized the Radio Circle's traditionally-based home community as "the modern method for multiplying the marvelous message" of the gospel.¹⁴⁹ By adapting the use of radio to family settings and group listening patterns, HCJB's organizers effectively molded the expression of their message to fit local conditions during the 1930s in less materially advanced societies.

Capture and innovation lay inter-meshed at the heart of HCJB's early receiver program, from Clarence Jones's first vision of receivers in the mission field until the end of WWII. After several years of experimentation with different distribution methods, Jones settled in 1934 on the format of the Radio Circle because it advanced the twin objectives of expanding audiences while augmenting the station's control over listener operations. To accomplish this dual goal, Jones chose to cede ultimate control of his own receiver operation. The capture of Ecuadoran listeners was made possible ironically by

the station's captivity to a larger conservative evangelical American public, on whom the station depended for financial and moral support.

Despite HCJB's experimental promise, the Radio Circle achieved extremely limited results in expanding and capturing Ecuadoran radio audiences prior to WWII. The state of receiver technology, the paucity of affordable reception facilities (particularly in poor rural areas), and the lack of disposable income by listeners severely limited the station's efforts to expand its audience in the republic on any significant scale during this period. Jones assessed the situation soberly in 1945: "Only when receivers are so plentiful and so cheap that every village has a large radio for all to listen and many native believers are equipped with smaller radios as "listening posts" will the fullest advantage have been taken of all that missionary radio offers to the Church of Christ in carrying out the great commission."¹⁵⁰ The effort to reach a mass audience would have to wait the technological advances and economic improvements of the post-WWII period, which would not only expand missionary listenership but profoundly alter listening habits and producer-user relations as well.

¹ Louis Carlat, "'A Cleanser for the Mind': Marketing Radio Receivers for the American Home, 1922-1932" in Roger Horowitz and Arwen Mohun, eds, *His and Hers: Gender, Consumption, and Technology* (University of Virginia, 1998); P. Rosen, "The Development of the Domestic Radio Receiver," *100 Years of Radio*, September 5-7, 1995, Conference Publication 411, Institute of Electrical Engineers, 1995; Marvin Bensman, "The History of Broadcasting, 1920-1960: Radio Homes," *The Bensman Radio Program Archive*, <https://umdrive.memphis.edu/mbensman/public/>, December 12, 2004.

² "Operating the Dial is An Exact Art," *Radio World* 5, April 19, 1924, 10, quoted in Louis Carlat, "'A Cleanser for the Mind': Marketing Radio Receivers for the American Home, 1922-1932" in Roger Horowitz and Arwen Mohun, eds, *His and Hers: Gender, Consumption, and Technology* (University of Virginia, 1998), 123.

³ For some of the extensive literature on male radio hobbyists, see Susan Douglas, *Inventing American Broadcasting, 1899-1922* (Johns Hopkins University, 1899-1922) and "Amateur Operators and American Broadcasting: Shaping the Future of Radio" in Merritt Roe Smith and Gregory Clancey, eds., *Major Problems in the History of American Technology: Documents and Essays* (Houghton-Mifflin, 1998); and Kristen Haring "The "Freer Men" of Ham Radio: How a Technical Hobby Provided Social and Spatial Distance," *Technology and Culture* 44 (2003), 734-761.

⁴ Clarence W. Jones, "Questions Answered by Dr. C. W. Jones," File 417 ("C.W. Jones"), HCJB, 15.

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- ⁵ Clarence W. Jones, "Report of My Trip to Venezuela and Intermediate Port Cities for the World Wide Christian Couriers", February 1 - May 1, 1928, unfiled, HCJB.
- ⁶ Marvin Bensman, "The History of Broadcasting, 1920-1960: Radio Homes," *The Bensman Radio Program Archive*, <https://umdrive.memphis.edu/mbensman/public/>, December 12, 2004.
- ⁷ Louis Carlat, "'A Cleanser for the Mind:' Marketing Radio Receivers for the American Home, 1922-1932" in Roger Horowitz and Arwen Mohun, eds, *His and Hers: Gender, Consumption, and Technology* (University of Virginia, 1998), 120.
- ⁸ Arthur P. Harrison, Jr., "Single-Control Tuning: An Analysis of an Innovation," *Technology and Culture* 20, 1979, 296-321.
- ⁹ Louis Carlat, "'A Cleanser for the Mind:' Marketing Radio Receivers for the American Home, 1922-1932" in Roger Horowitz and Arwen Mohun, eds, *His and Hers: Gender, Consumption, and Technology* (University of Virginia, 1998).
- ¹⁰ Department of Commerce report, cited in Christian & Missionary Alliance, *The Alliance Weekly*, September 11, 1937, 587.
- ¹¹ James Schwoch, *The American Radio Industry and Its Latin American Activities, 1930-1939* (University of Illinois, 1990), 102.
- ¹² James Schwoch, *The American Radio Industry and Its Latin American Activities, 1930-1939* (University of Illinois, 1990), Chapter 4.
- ¹³ James Schwoch, *The American Radio Industry and Its Latin American Activities, 1930-1939* (University of Illinois, 1990); Lawrence D. Batson, "The Extent of the Development of Radio Over the World," in Irwin Stewart, ed., "Radio," *The Annals of the American Academy of Political and Social Sciences*, 142 (March 1929): Supplement, 21-31; and Lawrence D. Batson, comp., *Radio Markets of the World, 1932*, U.S. Department of Commerce (Government Printing Office, 1932).
- ¹⁴ James Schwoch, *The American Radio Industry and Its Latin American Activities, 1930-1939* (University of Illinois, 1990); Lawrence D. Batson, "The Extent of the Development of Radio Over the World," in Irwin Stewart, ed., "Radio," *The Annals of the American Academy of Political and Social Sciences*, 142 (March 1929): Supplement, 21-31; Lawrence D. Batson, comp., *Radio Markets of the World, 1932*, U.S. Department of Commerce (Government Printing Office, 1932).
- ¹⁵ James Schwoch, *The American Radio Industry and Its Latin American Activities, 1930-1939* (University of Illinois, 1990); Lawrence D. Batson, "The Extent of the Development of Radio Over the World," in Irwin Stewart, ed., "Radio," *The Annals of the American Academy of Political and Social Sciences*, 142 (March 1929): Supplement, 21-31; Lawrence D. Batson, comp., *Radio Markets of the World, 1932*, U.S. Department of Commerce (Government Printing Office, 1932).
- ¹⁶ James Schwoch, *The American Radio Industry and Its Latin American Activities, 1930-1939* (University of Illinois, 1990), 103.
- ¹⁷ Lawrence D. Batson, "The Extent of the Development of Radio Over the World," in Irwin Stewart, ed., "Radio," *The Annals of the American Academy of Political and Social Sciences*, 142 (March 1929): Supplement, 21-31, 26 and Lawrence D. Batson, comp., *Radio Markets of the World, 1932*, U.S. Department of Commerce (Government Printing Office, 1932).
- ¹⁸ Robert Frederick Swenson, "An Oral History of Dr. Clarence W. Jones," February 21, 1977, Folder 12, Box 9, Collection 349 (Clarence Wesley Jones – Papers), BGCA, 27.
- ¹⁹ For comparison, Argentinians owned 525,000 (52 sets/100 people); Brazil 250,000 (6.43/100); Chile 30,000 (7.62/100); Peru 18,000 (3.27/100); Uruguay 17,000 (10.01/100); Venezuela 2,000 (0.66/100); Paraguay 150 (0.18/100); Bolivia 25 (0.01/100); Colombia 22 (0.005/100). Source: Lawrence D. Batson, "The Extent of the Development of Radio Over the World," in Irwin Stewart, ed., "Radio," *The Annals of the American Academy of Political and Social Sciences* 142 (March 1929): Supplement, 21-31, 25-26; Lawrence D. Batson, comp. *Radio Markets of the World, 1932*, U.S. Department of Commerce (Government Printing Office, 1932).
- ²⁰ See Jerome S. Berg, *On the Short Waves, 1923-1945: Broadcast Listening in the Pioneer Days of Radio* (McFarland, 1999), 82-84 and Lawrence D. Batson, comp., *Radio Markets of the World, 1932*, U.S. Department of Commerce (Government Printing Office, 1932), 67-68.
- ²¹ Letter from Clarence Jones, Business Manager, Station KGFG, to D.S. Clark, December 9, 1930, Folder 1, Box 6, Collection 349, BGCA.

- ²² Schwoch's account provides indirect evidence of this. James Schwoch, *The American Radio Industry and Its Latin American Activities, 1930-1939* (University of Illinois, 1990).
- ²³ Clarence Jones, *Radio, the New Missionary* (Moody Press, 1946), 82.
- ²⁴ Clarence Jones, *Radio, the New Missionary* (Moody Press, 1946), 82.
- ²⁵ Clarence Jones, *Radio, the New Missionary* (Moody Press, 1946), 82-83.
- ²⁶ Clarence Jones, *Radio, the New Missionary* (Moody Press, 1946).
- ²⁷ Clarence Jones, *Radio, the New Missionary* (Moody Press), 85.
- ²⁸ Letter from Clarence Jones to Paul Rader, May 8, 1934, "Corr-CWJ and Rader-Eicher, 1932-34," HCJB.
- ²⁹ "Radio Station – Mechanical Requirements for South America," undated, ca. early 1930, "Technical Equipment," File 6322, Cabinet 1, Drawer 4, HCJB.
- ³⁰ "Radio Survey of Ecuador," undated (ca. early 1930), "Technical Equipment," File 6322, Cabinet 1, Drawer 4, HCJB.
- ³¹ Letter from Clarence Jones, April 12, 1930, Folder 6, Box 6, Collection 349, BGCA.
- ³² [Decree] No. 183, *Registro Oficial*, Año II, Num. 406, 25 de Agosto de 1930, Republic del Ecuador, File 316 ("Ecuadorian Contract with HCJB – Copies of Registro Oficial (Various)"), HCJB, 2-4.
- ³³ Alvin M. Goffin, *The Rise of Protestant Evangelism in Ecuador, 1895-1990* (University Press of Florida, 1994), 29.
- ³⁴ Letter from Clarence Jones to Katherine Jones, September 7, 1930, Folder 6, Box 6, Collection 349, BGCA.
- ³⁵ Letter from Reuben Larson to Rev. David Mason, May 25, 1935, "Rev. & Mrs. Reuben E. Larson," International Ministries Concluded Files, Christian & Missionary Alliance, Colorado Springs, CO.
- ³⁶ Clarence W. Jones, interview with Nancy Woolnough, 1960, "Bio: Jones, Dr. and Mrs. C.W.," HCJB, 1.
- ³⁷ Letter from Clarence Jones to Katherine Jones, September 7, 1930, Folder 6, Box 6, Collection 349, BGCA.
- ³⁸ "Taking Radio to the Mission Fields: Giving 'Wings' to the Gospel - Magazine Article, February 1930," in "Copies of Original HCJB Letters and Documents," File 407, HCJB.
- ³⁹ Letter from Clarence Jones to Katherine Jones, December 30, 1931, Folder 6, Box 6, Collection 349, BGCA.
- ⁴⁰ Anonymous flyer, "Calling South America," HCJB.
- ⁴¹ Letter from Clarence Jones to Katherine Jones, March 1, 1931, Folder 6, Box 6, Collection 349, BGCA.
- ⁴² "Radio on the Mission Field," *Moody Bible Institute Monthly*, March 1931, "Clippings – 1930s," unfilled, HCJB.
- ⁴³ Clarence Jones, *Radio, the New Missionary* (Moody Press, 1946), 31.
- ⁴⁴ Alvin M. Goffin, *The Rise of Protestant Evangelism in Ecuador, 1895-1990* (University Press of Florida, 1994), 42.
- ⁴⁵ Frank Cook, *Seeds in the Wind: The Story of the Voice of the Andes, Radio Station HCJB, Quito, Ecuador* (World Radio Missionary Fellowship, 1976), Chapter 5.
- ⁴⁶ Letter from Eric Williams to Clarence Jones, January 1, 1933, unfilled, brown box, HCJB.
- ⁴⁷ Letter from Eric Williams to Clarence Jones, August 12, 1933, unfilled, brown box, HCJB.
- ⁴⁸ "Semi-Annual Financial Report of HCJB: For Six Months from Oct 16, '36 to April 15, '37," *Radiogram*
- ⁴⁹ Lois Neely, *Come Up to This Mountain: The Miracle of Clarence W. Jones & HCJB World Radio* (HCJB World Radio, 1980), 108-111.
- ⁵⁰ Letter from Eric Williams to Clarence Jones, undated (early September 1933), unfilled, brown box, HCJB.
- ⁵¹ Letter from Eric Williams to Clarence Jones, January 1, 1933, unfilled, brown box, HCJB.
- ⁵² Letter from Eric Williams to Clarence Jones, "Sunday Evening," undated (Spring 1933), unfilled, brown box, HCJB. Some confusion exists between Dr. Albert Levi and Marie Piedad Castillo de Levi, who owned and operated HC2RL in Guyaquil on 6770 kc, providing limited evening programming (Sundays from 5:45 to 7:45 pm, Tues from 9:15 – 11:15pm). Source: Jerome S. Berg, *On the Short Waves, 1923-1945: Broadcast Listening in the Pioneer Days of Radio* (McFarland, 1999), 84.
- ⁵³ Letter from Eric Williams to Clarence Jones, "Sunday Evening," undated (Spring 1933), unfilled; letter from Eric Williams to Clarence Jones, June 24, 1934, unfilled, and letter from Eric Williams to Clarence Jones, "Sunday Noon," undated (ca. August 15, 1933), unfilled, brown box, HCJB.

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- ⁵⁴ Letter from Eric Williams to Clarence Jones, January 29, 1933; letter from Eric Williams to Clarence Jones, June 24, 1934; letter from Eric Williams to Clarence Jones, July 15, 1934; letter from Eric Williams to Clarence Jones, "Sunday Noon," undated (ca. August 15, 1933); and letter from Eric Williams to Clarence Jones, "Jan 29" [1934], all unfiled, brown box, HCJB.
- ⁵⁵ Letter from Eric Williams to Clarence Jones, July 8, 1934, unfiled, brown box, HCJB.
- ⁵⁶ Letter from Clarence Jones to Katherine Jones, November 18, 1931, Folder 6, Box 6, Collection 349, BGCA.
- ⁵⁷ Letter from Eric Williams to Clarence Jones, "Sunday Evening," undated (Spring 1933), unfiled, brown box, HCJB.
- ⁵⁸ Letter from Eric Williams to Clarence Jones, undated (mid-August 1933), "Dear Clarence,... Forgive me for not writing sooner,...", unfiled, brown box, HCJB.
- ⁵⁹ Letter from Eric Williams to Clarence Jones, September 25, 1933, unfiled, brown box, HCJB.
- ⁶⁰ Letter from Eric Williams to Clarence Jones, undated (Fall 1933), unfiled, brown box, HCJB.
- ⁶¹ Letter from Eric Williams to Clarence Jones, "Sunday Evening," undated (Spring 1933), unfiled, and letter from Eric Williams to Clarence Jones, "Sunday Noon," undated (ca. August 15, 1933), unfiled, brown box, HCJB.
- ⁶² Letter from Eric Williams to Clarence Jones, April 9, 1933, unfiled, brown box, HCJB.
- ⁶³ Letter from Eric Williams to Clarence Jones, December 31, 1933, unfiled, brown box, HCJB.
- ⁶⁴ Letter from Eric Williams to Clarence Jones, January 1, 1933, unfiled, brown box, HCJB.
- ⁶⁵ Letter from Eric Williams to Clarence Jones, January 29, 1933, unfiled, brown box, HCJB.
- ⁶⁶ Letter from Eric Williams to Clarence Jones, August 12, 1934, unfiled, brown box, HCJB.
- ⁶⁷ Letter from Eric Williams to Clarence Jones, undated (mid-August 1933), "Dear Clarence,... Forgive me for not writing sooner,...", unfiled, brown box, HCJB.
- ⁶⁸ Letter from Eric Williams to Clarence Jones, September 25, 1933, unfiled, brown box, HCJB.
- ⁶⁹ Letter from Eric Williams to Clarence Jones, "Monday Noon," undated (prior to June 1934), unfiled, brown box, HCJB.
- ⁷⁰ Letter from Eric Williams to Clarence Jones, "Monday Noon," undated (prior to June 1934), unfiled, brown box, HCJB.
- ⁷¹ Letter from Eric Williams to Clarence Jones, June 31, 1934, unfiled, brown box, HCJB.
- ⁷² Letter from Eric Williams to Clarence Jones, July 8, 1934, unfiled, brown box, HCJB.
- ⁷³ Letter from Eric Williams to Clarence Jones, June 31, 1934, unfiled, brown box, HCJB.
- ⁷⁴ "Ecuador Contract with HCJB to Sell Radios 1933," File 421 ("Ecuador Contract with HCJB to Sell Radios 1933 (Original Copy)"), HCJB.
- ⁷⁵ Letter from Eric Williams to Clarence Jones, undated (ca. May 1934), "Dear Clar & Kath,...", unfiled, brown box, HCJB.
- ⁷⁶ Robert Frederick Swenson, "An Oral History of Dr. Clarence W. Jones," February 21, 1977, Folder 12, Box 9, Collection 349, BGCA, 35.
- ⁷⁷ Lois Neely refers to Jones as "peddling radios." Lois Neely, *Come Up to This Mountain: The Miracle of Clarence W. Jones & HCJB World Radio* (HCJB World Radio, 1980), 104.
- ⁷⁸ Letter from Clarence Jones to Paul Rader, May 8, 1934, "Corr-CWJ and Rader-Eicher, 1932-34," HCJB.
- ⁷⁹ Clarence W. Jones, "Questions Answered by Dr. C. W. Jones," File 417, HCJB, 27.
- ⁸⁰ Frank Cook, *Seeds in the Wind: The Story of the Voice of the Andes, Radio Station HCJB, Quito, Ecuador* (World Radio Missionary Fellowship, 1976), 87.
- ⁸¹ Lois Neely, *Come Up to This Mountain: The Miracle of Clarence W. Jones & HCJB World Radio* (HCJB World Radio, 1980), 107.
- ⁸² Lois Neely, *Come Up to This Mountain: The Miracle of Clarence W. Jones & HCJB World Radio* (HCJB World Radio, 1980), 107.
- ⁸³ Letter from Eric Williams to Clarence Jones, September 25, 1933, unfiled, brown box, HCJB.
- ⁸⁴ Letter from Eric Williams to Clarence Jones, "Friday Evening," undated (likely 1933), unfiled, brown box, HCJB.
- ⁸⁵ Letter from Eric Williams to Clarence Jones, undated (mid-August 1933), "Dear Clarence,... Forgive me for not writing sooner,...", unfiled, brown box, HCJB.
- ⁸⁶ Letter from Eric Williams to Clarence Jones, September 25, 1933, unfiled, brown box, HCJB.
- ⁸⁷ Letter from Eric Williams to Clarence Jones, "Friday Evening," undated (likely 1933), unfiled, brown box, HCJB.

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- ⁸⁸ Letter from Eric Williams to Clarence Jones, "Friday Evening," undated (likely 1933), unfiled, brown box, HCJB.
- ⁸⁹ Letter from Eric Williams to Clarence Jones, September 25, 1933, unfiled, brown box, HCJB.
- ⁹⁰ Jerome S. Berg, *On the Short Waves, 1923-1945: Broadcast Listening in the Pioneer Days of Radio* (McFarland, 1999), 116.
- ⁹¹ Letter from Eric Williams to Clarence Jones, "Thurs. Eve.," undated (early September 1933), unfiled, brown box, HCJB.
- ⁹² Letter from Eric Williams to Clarence Jones, undated (early September 1933), "Dear Clar,... Many thanks for the good wishes...", unfiled, brown box, HCJB.
- ⁹³ Letter from Eric Williams to Clarence Jones, undated (mid-August 1933), "Dear Clarence,... Forgive me for not writing sooner,...", unfiled, brown box, HCJB.
- ⁹⁴ Letter from Eric Williams to Clarence Jones, undated (ca. May 1934), unfiled, brown box, HCJB.
- ⁹⁵ "Oriente" folder, unfiled, small brown box, Drawer 4, Cabinet 5, HCJB; Frank Cook, *Seeds in the Wind: The Story of the Voice of the Andes, Radio Station HCJB, Quito, Ecuador* (World Radio Missionary Fellowship, 1976), 86.
- ⁹⁶ Letter from Clarence Jones to Katherine Jones, December 30, 1931, Folder 6, Box 6, Collection 349, BGCA
- ⁹⁷ Letter from Eric Williams to Clarence Jones, July 8, 1934, unfiled, brown box, HCJB.
- ⁹⁸ Letter from Eric Williams to Clarence Jones, "Thurs. Eve.," undated (early September 1933), unfiled, brown box, HCJB.
- ⁹⁹ Letter from Clarence Jones to Paul Rader, May 8, 1934, "Corr-CWJ and Rader-Eicher, 1932-34," HCJB.
- ¹⁰⁰ Letter from Clarence Jones to Paul Rader, May 8, 1934, "Corr-CWJ and Rader-Eicher, 1932-34," HCJB.
- ¹⁰¹ Letter from Eric Williams to Clarence Jones, June 24, 1934, unfiled, brown box, HCJB.
- ¹⁰² Letter from Eric Williams to Clarence Jones, July 8, 1934, unfiled, brown box, HCJB.
- ¹⁰³ Letter from Eric Williams to Clarence Jones, July 8, 1934, unfiled, brown box, HCJB.
- ¹⁰⁴ Letter from Clarence Jones to C.L. Eicher, October 21, 1934, "Corr-CWJ and Rader-Eicher, 1932-34," HCJB.
- ¹⁰⁵ Letter from Reuben E. Larson to Rev. David Mason, May 25, 1935, "Rev & Mrs. Reuben E. Larson," International Ministries Concluded Files, CMA.
- ¹⁰⁶ Letter from A.C. Snead to Rev R.E. Larson, August 8, 1935, "Rev & Mrs. Reuben E. Larson," International Ministries Concluded Files, CMA.
- ¹⁰⁷ Robert Frederick Swenson, "HCJB: A Descriptive Study of the History and Operation of the First Evangelical Missionary Radio Station" (Master's thesis, University of Maryland, 1977), 138; Clarence Jones, *Radio, the New Missionary* (Moody Press, 1946).
- ¹⁰⁸ The notion of radio as a form of "invisible community" derives from the work of Benedict Anderson, *Imagined Communities: Reflections on the Origin and Spread of Nationalism* (Verso, 1991). Michele Hilmes applied Anderson's notion of invisible communities directly to radio in *Radio Voices* (University of Minnesota, 1997).
- ¹⁰⁹ Clarence Jones, *Radio, the New Missionary* (Moody Press, 1946).
- ¹¹⁰ "The Voice of the Andes," 6th Anniversary Souvenir Program, File 297 ("Anniversary, 6th 1937"), HCJB.
- ¹¹¹ Radio Station HCJB, "Radiogram No. 3," June 1937, File 6 (Ecuador Field Fliers), Box 1, RG 818 (Ecuador), C&MA Alliance (C&MA), Colorado Springs, CO.
- ¹¹² Radio Station HCJB, "Radiogram No. 3," June 1937, File 6, Box 1, RG 818, C&MA.
- ¹¹³ Clarence Jones, *Radio, the New Missionary*; Radiogram, June 1937.
- ¹¹⁴ Radio Station HCJB, "Radiogram No. 3," June 1937, File 6, Box 1, RG 818, C&MA.
- ¹¹⁵ Ten-year anniversary program, 1941, File 407, HCJB.
- ¹¹⁶ Frank Cook, *Seeds in the Wind: The Story of the Voice of the Andes, Radio Station HCJB, Quito, Ecuador* (World Radio Missionary Fellowship, 1976), 87.
- ¹¹⁷ Clarence Jones, "Fellowship Report Prepared for the Annual Conference of the Christian & Missionary Alliance in Ecuador... by Radio Station HCJB, Quito," August 31, 1937, unfiled, brown box, "Material for Meetings," HCJB.
- ¹¹⁸ Lois Neely, *Come Up to This Mountain: The Miracle of Clarence W. Jones & HCJB World Radio* (Colorado Springs: HCJB World Radio, 1980), 124.

- ¹¹⁹ Ten-year anniversary program, 1941, File 407, HCJB; Radio Station HCJB, "Radiogram No. 3," June 1937, File 6, Box 1, RG 818, C&MA.
- ¹²⁰ Ten-year anniversary program, 1941, File 407, HCJB.
- ¹²¹ The more than 2,500 givers to HCJB in 1945 were represented by a total of 598 different churches and groups. Of this, Baptist and Independent churches and groups constituted the largest blocks, with 198 donors each, while Presbyterian made up the next largest number, with 50 different contributors. Source: "Churches and Groups," attachment to letter from Clarence Jones to Reuben Larson, January 2, 1945, "Letters from CWJ – 1946," unfiled, small brown box, Drawer 4, Cabinet 5, HCJB.
- ¹²² Radio Station HCJB, "Radiogram No. 3," June 1937, File 6, Box 1, RG 818, C&MA.
- ¹²³ Clarence Jones, "H.C.J.B.: Radio Circle Act.," untitled black ledger, small brown box, Cabinet 5, Drawer 4, HCJB. Note: Jones dates one of the receipts from Eicher for \$100 on behalf of Tillie Fisher on July 14.
- ¹²⁴ "The Voice of the Andes," 6th Anniversary Souvenir Program, File 297, HCJB.
- ¹²⁵ A brochure from 1940 indicated that American donors could "install" a battery set for \$30 or an electric receiver for \$15. Source: "Inaugural Souvenir program," February 1940, Folder 6 Box 12, Collection 349, BGCA.
- ¹²⁶ Clarence Jones, "H.C.J.B.: Receivers on Loan," untitled black ledger, small brown box, Drawer 4, Cabinet 5, HCJB.
- ¹²⁷ Clarence Jones, "Fellowship Report Prepared for the Annual Conference of the Christian & Missionary Alliance in Ecuador... by Radio Station HCJB, Quito," August 31, 1937, unfiled, brown box, "Material for Meetings," HCJB.
- ¹²⁸ D.S. Clark, "Report of the Chairman of the Ecuador Mission for the Conference Year 1936-1937," "Material for Meetings," small brown box, Drawer 4, Cabinet 5, HCJB; "The Voice of the Andes," 6th Anniversary Souvenir Program, File 297, HCJB.
- ¹²⁹ "Inaugural Souvenir program," February 1940, Folder 6 Box 12, Collection 349, BGCA.
- ¹³⁰ Clarence Jones, *Radio, the New Missionary* (Moody Press, 1946).
- ¹³¹ Letter from Eric Williams to Clarence Jones, July 8, 1934, unfiled, brown box, HCJB.
- ¹³² "The Voice of the Andes," 6th Anniversary Souvenir Program, File 297, HCJB.
- ¹³³ "The Voice of the Andes," 6th Anniversary Souvenir Program, File 297, HCJB.
- ¹³⁴ Ten-year anniversary program, 1941, File 307 ("Broadcasting (1944 -53)"), HCJB.
- ¹³⁵ Ten-year anniversary program, 1941, File 307, HCJB.
- ¹³⁶ "Inaugural Souvenir program," February 1940, Folder 6 Box 12, Collection 349, BGCA.
- ¹³⁷ Clarence Jones, "How To Tune In" in *Radio, the New Missionary*, pp. 140-147.
- ¹³⁸ "Inaugural Souvenir program," February 1940, Folder 6 Box 12, Collection 349, BGCA.
- ¹³⁹ The Christian & Missionary Alliance, "Worldwide Broadcasting," *The Alliance Weekly*, Vol. LXXVI, No. 18, May 3, 1941, 274.
- ¹⁴⁰ Clarence Jones, "A Survey of Religious Broadcasting in the 20 Countries of Latin America," February 15 - July 8, 1945, "History – Organization (A12)," HCJB, 12.
- ¹⁴¹ Radio Station HCJB, "Radiogram No. 3," June 1937, File 6, Box 1, RG 818, C&MA.
- ¹⁴² Clarence Jones, *Radio, the New Missionary* (Moody Press, 1946), 84.
- ¹⁴³ Letter from Clarence Jones to Reuben Larson, November 14, 1944, File 364 ("Correspondence CWJ and R.E. Larson, 1944"), HCJB.
- ¹⁴⁴ Letter from Eric Williams to Clarence Jones, undated (likely Fall 1933), "Dear Clar... many thanks for everything," unfiled, brown box, HCJB.
- ¹⁴⁵ D.S. Clark, "Report of the Chairman of the Ecuador Mission for the Conference Year 1936-1937," "Material for Meetings," unfiled, small brown box, Drawer 4, Cabinet 5, HCJB; "The Voice of the Andes," 6th Anniversary Souvenir Program, "Anniversary, 6th 1937," File 297, HCJB.
- ¹⁴⁶ Clarence Jones, *Radio, the New Missionary* (Moody Press, 1946), 84.
- ¹⁴⁷ Radio Station HCJB, "Radiogram No. 3," June 1937, File 6, Box 1, RG 818, C&MA.
- ¹⁴⁸ Clarence Jones, *Radio, the New Missionary* (Moody Press, 1946), 85-87.
- ¹⁴⁹ Ten-year anniversary program, 1941, File 307, HCJB.
- ¹⁵⁰ Clarence Jones, *Radio, the New Missionary* (Moody Press, 1946), 91.

Chapter 4

Postwar Expansion: A Missionary Radio for the Masses, 1944-49

Introduction:

Following the close of WWII, missionary radio underwent an epochal expansion of facilities as stations multiplied around the world. War-time advances in transmitter equipment, coupled with the availability of surplus equipment from the U.S. government, made radio broadcasting an attractive and cost-effective option for conservative evangelical organizations interested in disseminating their religion in the developing world. Anticipating this global expansion, Clarence Jones drew up bold plans for the growth of missionary radio in Ecuador, Latin America, and around the world. Jones worked to actively mold the nascent field by organizing training seminars, conferences, newsletters, and publications.

Receivers represented a critical element of the postwar expansion of missionary broadcasting. Two groups focused their attention on developing missionary radios for the masses during the immediate postwar period: missionary stations and amateur associations. The close of WWII brought with it significant optimism among HCJB's directors that a low-cost solution to the problem of a receiver for the masses could be found. On the demand side, this centered on the ending of closed markets in Latin America, which had roughly doubled the cost of radios during the war. On the supply side, the release of the electronics industry from wartime production promised to issue a large volume of less expensive sets. Working alongside HCJB's chief engineer and two American businessmen, Jones drew up a clear blueprint for the mass production of

missionary receivers and pursued the possibility of manufacturing in the United States as well as assembly operations inside Ecuador. The immediate postwar period saw the maturation of the portable radios in diametrically opposed applications as stylized objects of conspicuous, peripatetic consumption in America and as practical, if unglamorous, tools of evangelism and discipleship in the mission field. To meet the growing communication needs of missionary organizations overseas, groups of amateur electronics experts trained during the war supplemented the efforts of broadcasters such as Jones and lent their technical services in support of the global missionary receiver project.

The half decade of missionary radio reception following WWII merits close historical attention for several reasons. The period marked the advent of evangelical broadcasting as an international field. In response to the enlarged scope of its operations and a sign of its maturation, evangelicals articulated their first mass missionary receiver program, laying out in embryo the principles and practices that would guide missionary receiver programs over the following quarter century. The postwar years witnessed the arrival of an important new labor pool for missionary radio – amateur radio technicians and engineers in the United States, who were as passionately committed to the missionary enterprise as their counterparts in the field. The vision of a mass missionary receiver, first articulated in 1944 by Clarence Jones, found unexpected answers during this period that tell us much about the structural and historical limitations faced by international religious broadcasters as they attempted to propagate their message to the four corners of the globe during the immediate postwar period. By 1950, the expansion of evangelical radio around the globe and the unexpected demise of HCJB's Radio Circle had dramatized the need for

mass missionary reception. A partial solution to the demand for mass reception would arise from an unexpected quarter.

Extending the Radio Circle

World War Two produced significant advances in high-frequency transmitter technology. The military conflict between Allied and Axis powers, marked by the advent of airpower, led to rapid improvement of radar defense systems. Britain's longwave home defense system effectively saved the island nation from German invasion by providing advance notice of German Luftwaffe attacks. The invention of microwave radar systems by British scientists, which employed wavelengths as short as four centimeters, and their subsequent development at MIT's Radiation Laboratory reduced the cost of UHF radar systems while dramatically increasing their efficiency and practical operability. Rad Lab engineers succeeded in reducing the size of microwave radar systems, enhancing their utility in a wide range of applications. The cavity magnetron, which generated high-frequency signals, was small enough to fit inside a plane. The proximity fuze, more miniature still, could squeeze in the nose of shell, enabling bombs to detonate before striking targets and creating a new, lethal type of explosion.

Unlike advances in transmitter technology, with the exception of the selenium rectifier and the printed circuit, WWII produced few major advances in receiver technology.¹ Devoted to military production, American electronics manufactures produced almost no radio sets for consumers from mid-1942 until the end of the war. Set owners in the United States found it extremely difficult to repair sets or replace tubes during the war.² Despite the lack of wartime production, however, 90% of American

homes owned at least one set by 1945, thanks to the wide diffusion of radio ownership during the pre-war period.

The receiver situation in South America during WWII fared considerably worse than the United States. Since receivers most came from the United States, transportation costs, customs duties, sales commissions, and unfavorable exchange rates made radios a luxury good in Latin America during the war, enjoyed largely by members of the upper classes.³ Sets in Latin America were roughly twice as expensive as in the United States; a small, “table” model receiver with 4 to 6 tubes, which cost \$20 in the United States, ranged from \$30-\$50 on the continent, with prices as high as \$200 in Brazil.⁴ Clarence Jones estimated that roughly 4.3 million sets existed in Latin America by 1945, representing a small fraction of the population.⁵ In Argentina, the country with the highest per capita ownership, less than one-tenth of the country owned radios; at the opposite extreme, Ecuador only counted 20,000 sets for a population of 3 million, or less than 1% of the population, the lowest figure on the continent.⁶ In addition to high prices and skewed socio-economic ownership patterns, repair and maintenance of radios posed a major problem for set owners in Latin America during WWII as in the United States due to the shortage of parts, since electronics firms produced none for civilian consumption.⁷

Contemplating the end of hostilities, Jones began in early 1944 to weigh how to expand the station’s receiver program. The Co-Director of HCJB considered first an extension of the pre-war Radio Circle model as a means to provide radios for low-income groups within range of the station. Carmela Ochoa had broadcast daily Quechua programs over the Voice of the Andes since 1934, a few years after the station went on the air. Writing to his Co-Director Reuben Larson, Jones now argued that unless the

station developed a Radio Circle program for its Indian listeners, the station's considerable investment in its Quechua language program would be wasted. Jones suggested to Larson that the station establish listening posts with "Hacienda owners or sympathetic Christians or others" as a means of extending the Radio Circle.⁸

Jones was convinced that the early success of the Radio Circle model in Ecuador demonstrated the viability of exporting missionary radio to other areas of the world where populations could not afford to own sets. Jones believed that the development of Quechua programs, tied to listening posts established "with the Hacienda owners or sympathetic Christians," could provide a "working pattern" for use in other missionary radio fields faced "with similar economic and social conditions." Jones envisioned an expansion of "the Quechua receiving set-up" in Bolivia, Peru, and Columbia. Writing from HCJB's New York City office, Jones maintained he had conferred with Latin American missions groups there who were interested in the possibility of using radio to "[reach] primitive peoples with the Gospel." The idea of the Radio Circle also appealed to New York-based missionary organizations like the Sudan Interior Mission in West Africa because "the great mass of people" in areas where they worked could not ordinarily afford their own radios.⁹

Larson's response to Jones demonstrated the Achilles heel of the Radio Circle program. Larson concurred with Jones on the need to contact "hacienda owners and sympathetic Christians" and establish "Listening Posts" in order to promote the Quechua program. However, he noted a lack of station personnel to do so. He assumed the station would also have to provide the radios.¹⁰ Thus, a lack of resources – both personnel and

material – limited the immediate application of the Radio Circle model within South America and around the rest of the world.

HCJB's Postwar Expansion Plans and the Mass Missionary Receiver Project

The anticipated growth of international radio broadcasting after WWII required HCJB's leaders also to expand the station's transmitter facilities. The postwar period would find the station in an enormously different and difficult broadcasting environment. By 1945, Ecuador had 23 stations, with 7 in Quito alone. In addition to the significant growth of stations across South America since HCJB began operation in 1931, Jones also expected that numerous foreign governments would begin broadcasting into the region. If HCJB's voice was to be heard amidst the increasing confusion on the radio dial, a power increase to 50 or 100 Kw on the station's 12.5 MHz service would be needed. "[A]fter the war," Jones wrote,

“... every nation will be pouring out its propaganda on high power, plus all the radio advertising which I believe will be coming into Latin America. Certainly, people will tune most frequently and readily to that station which affords the best signal and clearest listening.”

Along with power plant additions, officials estimated HCJB's proposed expansion plans would cost nearly a quarter of a million dollars, a vast sum for the small and still young, privately funded, non-commercial station.¹¹

Postwar planning included not merely transmission, but reception facilities as well. Along with more powerful transmitters, Jones believed that low-cost reception was a prerequisite for the growth of postwar missionary radio communication. “I feel that one of the major problems of missionary radio,” he wrote to Larson, “is that of providing radios for the masses of the population.”¹² Larson concurred with Jones that the “question

of receivers is undoubtedly vital.”¹³ By late summer 1944, Jones shifted the focus of a solution from expanding the Radio Circle model toward production of a missionary receiver for the masses. Reuben Larson anticipated that an answer to the problem of mass receivers would emerge from the postwar environment: “No doubt as the war comes to a close, encouraging things are going to be revealed, both in connection with receivers and with transmitters.”¹⁴ HCJB’s Co-Directors expected that the postwar period would “usher in unparalleled opportunities for missionary progress.”

War-time advances in high-frequency transmission technology, including devices such as the cavity magnetron, explain the Directors’ optimism over the future of international radio transmitters. But how would postwar expansion solve the problem of low-cost receivers? Jones and Larson expected the postwar receiver market to help the Voice of the Andes’ receiver program in several ways. First, the release of demand pent-up during the conflict would spell significant new opportunities for receiver manufacturers. Jones argued that two to three million radios would be added to the existing four million sets in Latin America.¹⁵ Second, radio manufacturers around the world, particularly in the United States, would convert production facilities from military goods back to consumer electronics, meeting the expanded demand for sets. Finally, the availability of surplus war materials would enable organizations like HCJB to develop inexpensive receivers. The United States government owned up to \$100 billion in surplus equipment, which the War Department planned to “junk” immediately after the war. Much of the materiel had little value to its owners since few retail outlets existed for it and since individuals could not purchase equipment directly without merchandising

facilities. Missionary radio enthusiasts expected to obtain a bonanza of used communication equipment from the government's storehouse at very low prices.¹⁶

By August, 1944, Jones had settled on the solution of a mass receiver as the answer to the need for low-cost reception in the mission field. Having drawn encouragement concerning the feasibility of a cheap receiver from an article in *Time* magazine, which described a soldier who constructed a long-wave receiver from a safety razor, Jones instructed HCJB's chief engineer, Clarence Moore, to assemble data on constructing "low-priced receiving sets" in both earphone and loudspeaker models. Rather than have the station build the sets, Jones hoped initially to interest an American manufacturer in a venture to build a high volume of low-cost radios before the end of the war, anticipating that the set makers would have excess productive capacity after the close of hostilities and the cessation of military orders.¹⁷

HCJB publicized its postwar station expansion plans in September 1944. The program consisted of three components, one advance in transmitters and two improvements in reception. The station intended all three elements to work in concert to increase the size of the station's regular listening audience. First, expecting that "propaganda broadcasts" from various countries after the war would offer greater competition, and stressing the need for a "clear, loud, and regular" signal in order to be heard, the station planned to augment its transmitter power, although officials had not yet determined at press what exact form that increase would take. Second, the station confronted a significant reception problem in regions of Ecuador and many South American countries; "a very large percentage" of small, cheap longwave receivers on the continent could not pick up HCJB's shortwave signals. To circumvent the difficulty,

officials planned to organize the “South American network,” sending 15-minute transcriptions of Spanish gospel programs per week on recorded discs to 50 longwave stations in 16 Latin American countries, at an estimated annual cost of \$25,000 (roughly one-quarter the station’s current budget). The long-wave South American network, the officers and trustees of WRMF (which had oversight of HCJB) hoped, would provide a cheap and effective way to develop a regular, mass audience for HCJB’s programs across the continent. To pursue this vision of local radio, the station, finally, promoted a postwar plan to build “special low-priced radio receivers.” While the station estimated that four million radios existed in South America (with two million more to follow after the war), this number excluded the poorer classes – the “Indians and peon-classes” – who could not afford sets. In order to reach these groups, the station signaled its intention to construct large numbers of “cheap, rugged, and efficient” sets. In addition to U.S. manufacturers, Jones had begun to consider assembling sets in Ecuador from American parts, since the station advertised that sets were to be “assembled on the field.”¹⁸

In November 1944, Jones met in New York with engineer Clarence Moore and two businessmen, Paul and John Young, to formulate plans for a mass missionary receiver. The product of the meeting represented a visionary document and a milestone in the history of missionary radio reception -- a short report with a lengthy, awkward title: “Outline of a Project To Provide Small and Low-Priced Radio Receiving Sets to the Underprivileged Masses of Latin America and Elsewhere.” Global in scope, the ambitious project expressed “a real and urgent need” to provide receivers for the “millions of humbler folk” who could not afford commercial radio prices. The motive of Jones and his colleagues for reaching the poor was neither purely charitable nor purely

commercial, but rather religious – to increase low-income listeners for the gospel in South America and around the world. Jones’s project covered the poor not merely in Ecuador, but throughout Latin America; while he expected a need for 5,000 sets in Ecuador, he anticipated total demand of 88,000 sets in Central America, the Caribbean, and South America (excluding Mexico, Argentina, Brazil, and Uruguay).¹⁹ Jones estimated that similar or greater receiver opportunities existed in Asia, Africa, and India.

To reach the poor masses, Jones and Moore specified important design principles and features of the mass missionary receiver. Given the demanding environments where many sets would be used, and in order to recoup the initial purchase price, receivers had to be rugged and built to last. To minimize production costs, and because of the difficulty and cost of set maintenance in many parts of the developing world, a mass receiver had to be simple, with a “fool-proof design,” allowing for easy assembly and servicing. To reduce costs, sets would include three to five vacuum tubes. While Moore did not indicate whether the set would employ a superhet or simpler TRF (tuned radio frequency) design, HCJB’s chief engineer did specify that the receiver circuit “should provide for maximum clarity and volume.” Recalling his earlier involvement with the Radio Circle, Jones insisted that receivers employ loudspeakers and not headphones in order to reach larger audiences, such as “small groups in a home or outside gathering.” Jones and Moore settled on a longwave receiver because it was far cheaper to manufacture than shortwave, but the two men allowed for the possibility of developing a shortwave version later if it could be made cost feasible. The set would have a flexible three-way power source, using either battery or electrical mains power; it would need to use both AC and DC and adapt to multiple voltages (and cycles) in order to provide service around the world.

Anticipating the problems associated with battery replacement, the project plan specified that batteries should be very cheap, easy to obtain, long-lasting, and humidity and heat-resistant. Finally, in order to withstand the challenges of tropical environments, the receiver cabinet would have to hold up against heat, humidity, insects, rough handling, and discoloration.

In addition to their design features, Jones's team concerned itself with how to produce and distribute mass receivers around the world. Demonstrating an openness to means, Jones maintained that sets could be built either in the United States or assembled in Ecuador from American parts and suggested that organizers initially investigate "existing radio manufacturers." In order to avoid large outlays and ensure the project's success at each stage, Jones espoused developing the project gradually, attempting distribution in smaller "test" markets or individual countries (such as Ecuador) first, sinking large amounts of capital. Distribution of receivers remained a central concern of the project organizers. Jones suggested using missionary personnel to start distributing receivers. Recognizing that individual missionaries in the field could only distribute small quantities, Jones proposed forming a non-profit corporation with regional offices, preferably after several successful years of initial operation.

Finally, Jones's team addressed how to finance their project. Jones and his collaborators assumed the existence of a mass demand for receivers would translate into high-volume production runs, which would in turn make low cost possible. In order to make sets affordable to the poor masses, the project's authors aimed to produce radios in the range of \$5-\$10. Even with substantial orders, the authors accepted that the low receiver price would have to be subsidized. To provide subsidies, Jones recommended

establishing a revolving fund, maintained through receiver sales. Jones targeted Christian business men who were “desirous of making the Gospel available to earth’s millions” to provide start-up financing. Given its mission, Jones recognized that the project could not be undertaken “primarily as a profit-making enterprise.” Instead, he suggested establishing a not-for-profit organization which would operate on “strict ethical and moral lines” and would avoid “disintegrating eventually to merely a commercial basis.” Jones felt that the success of the venture would rest in part on keeping the operation “spiritual” and not “just developed on a commercial plane.”²⁰

Jones recognized the visionary nature of his project in 1944. He realized that significant obstacles stood in the way of the project’s development, including government restrictions and commercial competition. Given the state of receiver technology and production facilities, Jones openly queried the practical feasibility of the project, asking “Can such a receiver be built?” He wondered out loud who would provide financing and whether missionaries in the field would cooperate. Despite these major impediments, Jones’s report provides a valuable guide to the practical issues which would confront missionary radio reception as it expanded during the three decades after WWII. Jones’s questions about the technical feasibility and commercial integrity of the receiver operation would preoccupy missionary broadcasters as they explored a range of social, institutional, and technical approaches to reception in order to reach the unconverted masses in the developing world with their message of salvation.

Anticipating the close of the war, Jones explored ways to put his mass receiver program into practice and implement a plan that he felt “has been sorely needed for some time.” Writing to Larson in the fall of 1944, he proposed that HCJB formally undertake a

project to produce 10,000 to 100,000 “cheap radio receivers.” Jones intended to establish a “factory for production of locally produced radios in Ecuador,” shipping parts to Ecuador and assembling sets there with Ecuadoran cabinets, significantly reducing labor and shipping costs. John Young appeared willing to invest funds, while Jones contributed the overall designs and plans. By November 1944, Jones had begun pricing materials, which he believed could be obtained surplus from the U.S. government for as little as \$.05 on the dollar, with the goal of constructing a budget.²¹

In producing missionary receivers, Jones did not intend to interfere with the manufacturing plans of either the Ecuadoran government or private commercial firms. Jones considered his primary target, low-income users, a largely peripheral audience for existing set manufacturers. Noting that a national radio factory already existed in Quito, Jones asked Larson to find out if the government would in general welcome “further” assistance in establishing a national radio industry and, specifically, whether they would waive duties on imported parts. At the same time, however, Jones encouraged Larson to keep his specific plans secret from Ecuadoran officials, for fear of raising suspicion.²²

In assembling radios, Jones envisioned supplementing, rather than competing with, market forces. While he anticipated that thousands of name-brand radios from U.S. and Europe would flood South American markets after the war, Jones had learned from experience in Ecuador that the middle and upper classes would purchase most of these sets. Instead, Jones envisioned a “niche” market that commercial firms would not find profitable: namely, “poor Indians” and “peones,” who made up the lowest strata in Latin American society. Recognizing that such audiences would generate minimal profit, Jones informed Larson that he considered it the special responsibility of missionaries,

especially the Voice of the Andes (not the market), to make radios available to lower income groups: "... it will be up to the missionaries and the Voice of the Andes to see it that those radios are produced and distributed which will still reach the lowest social strata and those who are not in a position economically to buy the regular commercial type of radio receiver." In addition to affordability, Jones reiterated important features of the mass missionary receiver to Larson. Since most lower-income audiences for receivers lived "outside the Metropolitan areas" and hence had no electricity, sets would have to derive their power from either batteries or a hand generator. Reflecting his experience in Ecuador, Jones raised concern about rapid decay of batteries under tropical humidity.²³

Fixed tuning formed the cornerstone of the mass missionary receiver project. The practice of pretuning receivers in fact originated historically along with the mass missionary receiver. Prior to 1944, HCJB's Radio Circle program utilized all-wave (long and short-wave) commercial receivers with open tuning. The station publicly mentioned pretuning for the first time in September 1944 as part of its postwar expansion plans. The station's "special low-priced radio receivers" would be pretuned and "suitable to only one station, HCJB." According to station publicity, pretuned radios offered two general advantages. First, it promised larger captive audiences. Tuning only HCJB "assur[ed] an increased hearing of the Gospel," enhancing the effectiveness of the station's religious programs. Pretuning also offered the station technical and economic advantages. By "making the special receivers extra simple of operation and maintenance," fixed tuning would presumably make sets cheaper to build and repair.

Pretuning had important demographic characteristics. A close correlation existed between fixed reception, receiver cost, social class, and degree of listener freedom.

Higher-priced sets afforded better-off listeners the chance to scan the medium-wave (AM) and short-wave dial for themselves and choose the object of their listening. One of the unspoken prices the poor paid for their cheaper, fixed reception radios was the “opportunity cost” afforded by limited access to the radio spectrum. Unlike their wealthier counterparts in the middle and upper classes, lower-class listeners to HCJB on pretuned sets had to rely exclusively on the Voice of the Andes for news, entertainment, and cultural radio programming.

As of December 1944, Jones still envisioned assembling inexpensive pretuned radios on a mass scale in Ecuador. Jones and Larson, HCJB’s Co-Directors, shared enthusiasm for the “radio-receiver project” - i.e. “the plan to manufacture radios to tune one station – HCJB very cheaply and in Ecuador by national labor.” Jones conceded to Larson that “many vital details,” such as “design, power supply, government reactions,” remained to be worked out.

Clarence Jones’s Latin American Survey, 1945

Jones’s vision for missionary radio included not merely Ecuador, but Latin America as a whole. To facilitate the growth of evangelical radio across the continent after the war, Jones undertook an extensive tour of Latin American broadcast facilities during the first six months of 1945. Conducted jointly by WRMF and the Committee for Cooperation on Latin America (CCLA), a joint evangelical mission agency, Jones’s impressive visit of forty “important radio and missionary centers” provided an exhaustive overview of evangelical radio in Latin America and represented the first survey of its kind in the region. In sponsoring Jones’s tour, the WRMF and CCLA hoped to prompt a

“proposed expansion program for the post-war period” in Latin America. By increasing awareness of the potential of radio for global evangelization, Jones’s sponsors hoped his visit would increase support for radio broadcasting in the form of finances, prayer, and personnel training from American mission boards, the survey’s primary audience.

“A Survey of Religious Broadcasting in the 20 Countries of Latin America” attested to the “phenomenal growth and widespread acceptance of radio in the missionary fields” since Jones’s first trip to the region in 1928. As of July 1945, some 76 evangelical groups in Latin America broadcast nearly 1150 programs for over 400 hours a month, nearly all this on airtime purchased over commercial or government stations. Overall, the number and organization of radio stations had increased considerably since HCJB first began operations in 1931. While Argentina had 59 stations, Brazil, Cuba, and Mexico had 118, 126, and 170 radio outlets each, respectively. The Pan Am Broadcasting Co. ran a series of networks in Argentina, Brazil, Mexico, and Cuba, ranging in size from eight to seventy stations.²⁴

In Jones’s view, two obstacles impeded the further growth of missionary radio in Latin America. The first difficulty dealt with transmission of broadcasts. Most evangelical organizations lacked broadcast facilities, and purchased air-time for gospel programs from non-evangelical outlets. As the first overseas Protestant missionary station in the world, HCJB stood out as an exception to the rule on the continent. Jones considered HCJB an exemplar for missionary broadcasting practice in Latin America because it lay wholly in evangelical hands: “The rise and growth of HCJB has served as a workshop and experimental laboratory where the whole idea of missionary radio could first be worked out *in stations controlled and operated by missionary forces.*” (Italics

added.) The second impediment to the expansion of evangelical broadcasting in Latin America, in Jones's estimation, lay with receivers. Roughly one-half of the receivers used by Latin Americans were small longwave sets that could only pick up local stations; as a result, evangelical stations that relied on shortwave services, such as HCJB, were in effect lost to at least half the radio audience in South America. To overcome these obstacles, Jones now proposed extending HCJB's model of local long-wave service throughout Latin America, establishing "radio centers" in large population centers on the continent, such as Mexico City, Havana, Buenos Aires, and Rio de Janeiro. Setting up missionary radio stations in densely populated areas would provide missionaries with far greater control over broadcast operations than airing on non-religious stations, providing a more visible, daily presence in the lives of listeners than possible with shortwave communication from a distance.²⁵

The effectiveness of local longwave radio centers depended on extending reception facilities to the more than 90% of the population who lacked receivers. In Jones's view, getting programs on the air was only half the battle of missionary radio: "The remaining half of the task is to get people to listen!" Jones considered the provision of receivers for the masses a mandate for missionary broadcasters:

"No Gospel broadcasting project for Latin America can be complete unless it makes provision somehow for getting more radio receivers into the hands of the poorer class of people in each country. Here Gospel broadcasting may well find its greatest field." (Emphasis in original)

In Jones's view, equipping the masses with radios represented a "new sphere" for evangelical activity in the postwar environment.

Jones recommended evangelical mission agencies follow two strategies in order to provide radios for the "poorer classes" in Latin America. First, recalling

his early experience with HCJB's Radio Circle, Jones enjoined "wide use of existing receivers." Given communal patterns, Jones estimated that 5 to 20 people commonly listened to sets in Latin America, multiplying the effectiveness of existing inventory. Capitalizing on current equipment entailed deepening its social usage. This involved a series of steps for broadcasters: persuading listeners to "share" their sets with non-family members, including servants, neighbors, even "whole village[s]"; encouraging hacienda owners to invite Indians on their farms; using sets as loudspeakers and placing them in public places; opening windows on streets; placing central loudspeaking systems in municipalities, hotels and hospital rooms; and using sets and p.a. systems in church services and open-air evangelistic meetings to attract passers-by. Taken together, a significant "portion" of these sets would tune in gospel programs. Supplementing communal resources and building on his own recent efforts, Jones espoused a second alternative for evangelical agencies: mass production of a "'poor man's' radio." For Jones, given the enormity of Latin American populations who lacked radios, this measure spelled the main "practical method of increasing the listening audience." Jones remained thoroughly convinced that the mass receiver would "increase enormously the effectiveness of all Gospel broadcasting by augmenting the listening audience."²⁶

Jones's concrete proposal concurred in short form with his earlier mass receiver project. To target the "marginal group in working classes" and reduce prices below the present range of commercial sets, Jones shrunk the receiver even further, employing only one or two tubes to achieve a price of \$5 - \$10. Sets

would employ a “simplified standard circuit design.” Operating on longwave, they would pick up “local reception only” and operate by AC or battery. Arguing that his project would introduce a new standardized set assembly industry, employing “local radio technical services,” Jones maintained that he had contacted the governments of several smaller Latin American countries, who agreed to allow entry of parts duty-free. The governments of these countries, Jones alleged, apparently saw a “cultural and educational” benefit of radio production for their people. Lack of funding, in Jones’s view, provided the major remaining impediment to commencing the provision of mass radios. For this, Jones appealed characteristically to supporters in the United States: “It remains for some Christian businessman or organization to provide the poorer masses of Latin America with a chance to hear the Gospel regularly through their own radios.” Jones remained confident that he could locate such a source of financial support.²⁷

Building a Mass Missionary Receiver, September 1945 - February 1946

Several months after completion of the Latin American survey, Jones took up the mass receiver project directly again. After finishing the tour, he returned to WRMF’s New York office in order to raise funds for HCJB’s five-year expansion project. In the United States, Jones developed contacts with two possible manufacturers of a missionary receiver. On October 16, 1945, Jones planned to travel to Fall River, Massachusetts to meet with John Young and discuss a proposal from Hallicrafters Corporation, a leading manufacturer of radio receivers. Hallicrafters proposed to manufacture 50,000 five-tube

sets at a cost of \$6 apiece. Jones remained unclear to what degree the production run represented a specialty order, since he was not sure if the receivers would be tropically treated. The second manufacturing lead came with Westfield Manufacturing, a maker of die castings and plastic moldings in Detroit, Michigan. Jones heard of the firm through David Gillespie, a part-time employee of the firm with whom he had met recently in New York City. Westfield expressed an interest in developing a small receiver along the lines outlined in Jones's survey of Latin American broadcasting. The company would supply the chassis and cabinet, "pick up the tubes and other necessary parts," and ship the assembled sets to the various countries of Latin America.²⁸

By November, 1945, both initial manufacturing ventures appeared to have gone nowhere. Nonetheless, after returning from a fund-raising trip in the Midwest, Jones wrote to Larson that John Young continued to show "real interest" in financing the missionary receiver project. Demonstrating his indomitable spirit, Jones had also located an additional contact, George Adams. Adams, who served in U.S. Army and Navy during WWII and worked most recently with the War Procurement Division, had "a great deal of experience and background both in technical broadcasting of radio and production of receivers." Young and Adams had agreed to form their own joint venture "to produce small receivers," using a manufacturing firm in Miami which had become available after the war following reconversion.²⁹ At the close of 1945, Adams was still working with Young "on the question of cheap, small radio receivers for mass production." The radio manufacturing plant in Miami had produced a pilot 4-tube model with a loudspeaker, which Jones hoped to see shortly.³⁰

Two months later, plans for the Miami plant appear to have fallen through, as Jones pursued still further options to put his project into practice. In February, 1946, Jones located “a very fine open door” into surplus war materials that could be useful for receivers. P.K. Myhre, an engineer at Collins Radio who was “vitally interested” in HCJB and would later become the station’s chief engineer, had access to a considerable amount of surplus radio parts from the war, which he was willing to make available to the station at little or no cost. Jones also grew excited about a civilian application for the proximity fuze which he read about in *Broadcaster* magazine.³¹ In laboratory stage, the “very small receiver” (the size of a cigarette package) employed subminiature radar tubes used in the nose of shells and a printed circuit instead of wiring or condensers, attached to loudspeaker (instead of earphones). Despite the early stages of its development, Jones considered the existence of the miniature radio “a wonderful answer to the demand which we have noticed for small, cheap receivers for the masses of South America.” Jones deemed that the receiver technology might well prove the direct providence of God for missionary broadcasting: “This is the first great new advance in receivers design to come out of the war and it may be one of God’s answers to the things we have been praying for along this line.”³² Jones’s comments indicated his robust confidence and determination, founded on a resolute faith in divine backing for his radio project.

Though unsuccessful, Jones’s attempt to organize mass production of a missionary receiver reveals an important motivation for the missionary radio enterprise. The experience of missionary reception from 1944 to 1946 demonstrated the technological optimism of missionary broadcasters such as Jones that a strictly technical solution to the shortage of receivers in the developing world would be found. Such

optimism had a closely connected technical and spiritual origin. Just as many conservative Protestants viewed missionary broadcasting as direct divine provision for the task of global evangelization, so faith in technology for evangelicals was closely linked to religious belief. Evangelicals found it easy to identify technical progress with the “will of God” because of their overall instrumental conception of technology.³³ Rather than understanding them as social or cultural constructions, evangelicals generally viewed communication systems in utilitarian terms, weighing their value in light of their positive or negative results. If broadcasters used radio to spread the gospel (by definition, for evangelicals, the highest possible spiritual good), then radio could be construed not only as beneficial, but as divinely approved and even ordained. Evangelicals also held a highly teleological view of world history, which held that events were progressing unstoppably toward the worldwide proclamation of the gospel followed by judgment and the earthly return of Jesus Christ. Evangelical broadcasters easily transferred this teleology to their view of technological development, since radio broadcasting facilitated completion of the process of evangelization and hastened the advent of Christ. Taken together, the instrumental and teleological worth of radio provided grounds for its divine opprobrium.

Yet, the stop-and-start nature of Jones’s efforts with different manufacturing firms between 1944 and 1946 illustrated the practical difficulties involved in building a mass missionary radio. Despite the availability of excess factory capacity, and despite the attempt by numerous electronics firms to find new consumer outlets, Jones could not procure a commercial manufacturer for a mass receiver immediately after the war. The optimism of missionary broadcasters about postwar broadcasting opportunities did not

easily translate into reality in the area of reception. Apparently, God's plan did not always flow as immutably as hoped or expected. As evidenced by his reading of the *Broadcaster* article, Jones appreciated the potential importance of miniaturization for radio reception. Yet, despite his confidence that miniaturization represented divine provision, Jones was well ahead of his time. As Michael Brian Schiffer points out, miniaturized radios had to await developments of the early 1950s in the United States before developing into a strong consumer market. Miniature radios employing subminiature tube technology provided poor audio quality and consumed large amounts of battery power. In a postwar setting where Americans were bent on displaying their pent-up purchasing power, the radio's small size (which could easily disappear in a shirt pocket) lacked conspicuousness and conveyed the wrong consumer image of frugality.³⁴ Despite Jones's hopefulness, it would require almost a decade before "small cheap receivers," benefiting from wartime technology, became commonplace in the United States, much less in the mission field.

Paving the Way for Global Expansion, 1945-47

Beginning in the winter of 1945, Jones concerned himself increasingly with preparations for the global expansion of missionary radio, which he anticipated would take place after the war. Based in WRMF's New York office, Jones focused on raising funds for HCJB's expansion project to augment its transmitter facilities. Jones's leadership of the postwar missionary expansion project stemmed from his personal stature as the founder and principal architect of the field. Evangelical organizations involved in mission work naturally looked to HCJB, the "Pioneer Missionary

Broadcaster,” for advice and practical leadership in radio work. Jones’s own vigor, opportunism, and sense of responsibility contributed as well to his prominence in the transformation of missionary radio from a single missionary station to a broadcasting field during the decade following WWII.

More than any other contemporary, Jones anticipated and single-handedly publicized the postwar global expansion of missionary radio. In September 1945, Jones identified prospective missionary broadcast projects with specific individuals or organizations in ten different locations around the world, including four in South America: the so-called Voices of Africa, Asia, Europe, French Indochina, Alaska, Iberia, Peru, Brazil, Argentina, and Bolivia.³⁵ While WRMF trustees and officers debated the exact part the organization would play in this expansion, balancing its limited resources with its commitment to HCJB’s own growth, Jones clearly relished at least a central consultative role for the pioneer station. Over a two-year period from 1944 to 1946, he conducted extensive negotiations with executive officials at Sudan Interior Mission, also headquartered in New York City, with a view to establishing an evangelical station on the African continent. As a follow-up to his tour of South America, Jones worked closely with the Committee for Cooperation in Latin America (CCLA), an alliance of conservative mission organizations committed to evangelizing the continent by radio. The inter-missionary evangelical organization looked heavily to HCJB to serve as a cornerstone of a “Latin American network of Christian broadcasting stations.” Jones made HCJB’s facilities available to the CCLA for technical advice, personnel training, program production and transcription recording.³⁶ To promote the cause of missionary radio, Jones visited Nyack College in Nyack, New York in 1947, the principal missionary

training school for the Christian & Missionary Alliance and his wife's alma mater. During his visit, Jones likely influenced two Nyack students, Paul Freed and Ben Armstrong, to enter missionary broadcasting; both men later became prominent figures in the field.³⁷

In addition to making HCJB's resources available to missionary organizations interested in starting radio stations, Jones created an organizational infrastructure for missionary broadcasting. In December 1937, Jones had first attempted to forge a publication (*Radio Evangel*) that would act as a central clearinghouse for information on missionary radio. By August 1944, he had launched a monthly publication, *Foreign Missionary Radio*, which contained data of interest to American international religious broadcasters.³⁸ In order to promote the use of radio for global evangelism and to streamline publicity efforts, Jones conducted a thorough survey of American gospel broadcasters world-wide in 1937, assessing their current commitments to the field.³⁹ In June 1944, he joined with Howard Ferrin of the Providence Bible Institute to convene the first missionary radio conference in Columbus, Ohio; sixty men met to discuss the subject of "quickly reaching the masses through radio."⁴⁰ According to the conference, only one other full-time missionary station existed on the air at the time aside from HCJB – an outlet of the Christian & Missionary Alliance in Shanghai, China.⁴¹ Jones's publication of his own memoir with Moody Press in 1949, entitled *Radio: The New Missionary*, chronicled HCJB's fifteen-year history and actively promulgated the cause of missionary radio, enhancing the visibility of the new field and helping legitimize it among conservative evangelical American audiences.

In December 1945, Jones formalized plans for the world-wide expansion of missionary broadcasting in a blueprint entitled, “A Global Planning Project for Missionary Radio Stations.” Jones intended his proposal as a planning document for “coordinated cooperation” among executives of evangelical mission societies interested in missionary broadcasting, which would avoid duplication of effort by missionary organizations and secure wider coverage and “maximum efficiency for Gospel broadcasting worldwide.” Using five criteria to guide selection of sites (population density, language divisions, geographical distribution, government permits, and availability of missionary societies), Jones listed the 38 best locations for missionary stations around the world. Ambitious in scope, Jones called for “a local Gospel longwave broadcast station in every capital and large city” world-wide. Extending HCJB’s model of local broadcasting, which Jones promulgated in his Latin American survey, Jones recommended for initial installation of a 5 Kw longwave transmitter designed to reach local populations, followed by the addition of a second short-wave station of 1-5 Kw oriented to neighboring countries.

Finally, Jones’s vision for the global expansion of missionary radio included a practical educational component. As the enterprise of missionary radio developed, it called for a new type of missionary with technical training in radio electronics or broadcasting. In July, 1945, Jones first floated the idea of a “Summer School of Christian Radio” to his Co-Director in Quito, Reuben Larson. In organizing a formal radio school experience, Jones had two closely related purposes in mind. No organization appeared to be making plans to “instruct” and “prepare” workers directly for work in gospel broadcasting. By gathering and training “a group of workers who were definitely

interested in specializing in missionary broadcasting,” Jones could, first, provide a “source of prepared workers” for his own station in the areas of program production and station management. Second, Jones’s proposal “would fill a tremendous need” among missionary stations more generally and “give more point and purpose to the plans and projects of all missionary organizations and individuals who wish to begin broadcasting.”

Jones quickly put his plans into practice. After consulting with Howard Ferrin and Stuart Clark about a joint collaboration between HCJB and Providence Bible Institute (PBI) in a summer radio school, Jones projected a start date of July 1, 1946. Modeling himself after the Wycliffe Translators’ Summer Institute of Linguistics, an intensive training program at Oklahoma University, Jones hoped to enroll faculty at PBI, as well as “some of the outstanding leaders in th[e] sphere [of gospel broadcasting] in the United States.” Jones also mentioned the possibility to Larson of a follow-up internship with HCJB – an “In-Training Broadcasting Course” – which would last three to six months.⁴² By September 1945, Jones had contacted several prominent leaders in the conservative fundamentalist community concerning his proposal, including Ferrin, Wendell Loveless, John E. Brown, and Dr. Bob Jones, founder of Bob Jones University. Jointly sponsored by WRMF and PBI, Jones and Ferrin opened the first “‘Fellowship’ Summer School of Christian Radio” on the campus of PBI over two weeks from July 1-12, 1946, for a total cost to students of \$39. Ferrin presented the “History of Gospel Broadcasting,” while Jones taught on the “Policies and Practices in Missionary Broadcasting.” Several other faculty members from conservative Bible institutes and radio stations across the country taught on a variety of practical topics.

The publicity flyer produced by Jones for the radio summer school demonstrated the importance of program production and marketing for evangelical radio. The flyer targeted producers of gospel programs, such as “pastors, radio preachers and program producers, missionaries and candidates...,” rather than engineers or technical candidates. Judging from the preliminary inquiries he had received from applicants, Jones expressed optimism about the need which such prospective students expressed for practical broadcast training.⁴³ To persuade students to apply, the flyer argued that radio in the United States had become an established medium of communication for conservative Protestant groups, as demonstrated by the millions of dollars spent by religious groups annually to buy time for gospel programs. To be effective, the brochure maintained that these programs had to keep pace with practices in commercial industry and constantly improve program standards. Training in gospel radio involved mastery of “the essentials and art of program production for gospel broadcasting,” particularly the ability to “assure the attention and interest of the listening public.” Radio, the brochure furthered, was also “becoming an increasingly vital evangelizing factor” in the mission field. To meet the rising challenge of missionary radio, the brochure concluded, “we must have trained workers who know the gospel and how to make it attractive to radio listeners everywhere.” Summer school faculty, experts in gospel radio, apparently did not distinguish between the basic practice of broadcasting designed for American and foreign audiences.

At home and abroad, then, radio broadcasting for evangelical groups included an essential marketing component, built around quality programming modeled on commercial stations and of current interest to audiences. As evidenced by Jones’s

summer radio school, evangelicals felt a clear need to constantly improve broadcast standards in order to attract listeners in the U.S. and overseas. Following the “essential principles of radio broadcasting” meant keeping current in order to ensure listener appeal and hence success. Though they felt their religious message never changed, gospel broadcasters evinced a willingness to constantly renovate the practical means by which they communicated in order to enhance their effectiveness. Attendance at Jones’s summer course demonstrated evangelical concern with marketability. Jones’s experiment met with at least a degree of success, since he subsequently repeated it in 1947 and 1948 in Providence and Los Angeles, California.

The Postwar Expansion of Missionary Radio, 1948-54

The decade following WWII witnessed an historic world-wide expansion in missionary broadcasting transmitter networks. In 1945, two missionary stations existed in the world; by 1959, the number had risen ten-fold to twenty, covering the globe with gospel radio waves.⁴⁴ Advances in high-frequency transmission made during the war, coupled with the wide availability of used military equipment later on secondary markets, made the construction of transmitters and the establishment of stations after 1945 viable and cost effective for missionary organizations on a widespread basis. Improvements in power grid tubes used for communications, radar, and radio spilled over into the immediate postwar period. To stave off shrinking postwar markets, the major American tube manufacturers RCA, Machlett, and Eimac enhanced the performance of high-powered tubes used in professional applications such as broadcasting. In turn, American transmitter manufacturers such as Hughes, Continental, and Harris incorporated advanced

tubes into new high-wattage transmitter designs, further enhancing transmitter performance.⁴⁵

As the “Pioneer Missionary Broadcaster,” HCJB set the tone for global expansion. Rather than opting to form a single large shortwave transmitting station with greater global reach, HCJB’s leaders proved unwilling to forego the station’s local ministry and opted instead for “a good and conservative expansion program” with “a firm foundation in Quito.”⁴⁶ The station augmented power on several stations, operating on low and high frequencies, simultaneously. While maintaining its longwave presence in Quito at 1 Kw, HCJB beefed up its 24 and 31 meter services to South America to 50 Kw each.⁴⁷

Following HCJB, Latin America led the way in missionary radio expansion. This resulted from the immediate example and direct involvement of HCJB through Jones’s survey, as well as the continent’s relatively advanced reception facilities, a product of its decades-old ties with the American radio industry.⁴⁸ The Latin American Mission (LAM) started Station TIFC, which went on the air in Costa Rica in February 1948. The following year, LAM teamed up with the directors of HCJB to start Station HOXO in Panama City on 500 watts long-wave. The Canadian Baptist Mission Board established CP-27 in La Paz, Bolivia in 1949, while the InterAmerican Mission Society and the Central American Mission inaugurated 4VEH and TGNA, respectively, in Guatemala City in 1950.

Asia and Africa followed Latin America in adding missionary stations. In June 1948, three Pentecostal Christians from California established the Far East Broadcasting Company, which went on the air in the Philippines on a 2 Kw short-wave transmitter,

broadcasting to mainland China. In February 1954, Paul Freed, a graduate of Nyack college and Baptist minister from North Carolina, set up short-wave operations in Tangiers, North Africa, initially targeting persecuted evangelicals in Francoist Spain; as Freed expanded his operations into Europe and the Middle East, he adopted the name Trans World Radio.⁴⁹ In January 1954, two students from evangelical Wheaton College, William Watkins and Abe Thiessen, provided SIM with a radio voice, launching Station ELWA in Liberia, West Africa. In addition to setting up their own transmitters, conservative religious broadcasters in the United States bought up air time on commercial outlets overseas (such as Radio Luxemburg) particularly in areas such as Europe where site licenses and frequencies were difficult to obtain. As a result of postwar expansion, sixteen conservative religious broadcasters covered the globe by 1956 on 40 frequencies, employing 56 transmitters.⁵⁰

The Portable Radio in America, 1945-54

Along with advances in power tube design, the postwar years witnessed a revival in the market for commercial radio receivers. Following the drop-off in military requirements, electronics companies converted to civilian radio set production full force after the war, supplying pent up consumer demand. In 1947, radio manufacturers turned out 20 million sets, with a retail value of \$1 billion. Despite the rise of television, heavy sales of radios carried over into the 1950s as set ownership became nearly universal in American households. In 1952, set makers produced 10 million AM receivers for 46 million radio homes, nearly 97% of all households. Steady production of AM receivers

continued throughout the decade, as the market for automobile sets rose dramatically; in 1960, firms produced 16 million AM sets.⁵¹

Portable radios represented a small, but significant share of the postwar American receiver market. The period 1945 to 1954 represented a “high-point in portable radio design using tube technology.” Between 1946 and 1954, portable set-makers sold 15 million sets, with average annual sales over \$1 million. In the peak years 1947 and 1948, manufacturers sold \$2.5 million worth of portable sets. Following the immediate postwar surge in demand, over fifty companies manufactured portable sets in the late 1940s, though few of the firms remained by 1950.⁵²

Expanded sales of portables in the early postwar years relied on marketing techniques rather than technical improvements. The immediate postwar period saw in fact few innovations in portable radio technology. In design terms, 1946 portables continued unchanged from 1942 models; companies in fact utilized stockpiles of components saved from before the war. Instead of redesigning portables, manufacturers focused on restyling sets, resorting to a series of “gimmicks and distinctive features” to meet the needs of increasing numbers of Americans who wished to experience and express more affluent lifestyles.⁵³ In the context of an increasingly affluent postwar American consumer society, portables connoted “good times.” In advertisements and displays, manufacturers stressed the aesthetic attraction and conspicuous appeal of postwar portables, which now came in multiple shapes and a range of colors. Americans continued to view portables as companions for trips, which expanded along with the construction of the interstate highway system and the rise of automobile vacations. Affluence also meant increased hobbies for Americans, who purchased greater numbers of electronic assembly kits,

including radios. Finally, manufacturers marketed portables as ideal gifts for special occasions such as birthdays and graduations.⁵⁴

For the first time since the advent of commercial broadcasting in the early 1920s, American purchased radios in large numbers for their social value and visual appeal, rather than solely for their reception capabilities. “Personal” portables, pioneered by Emerson in 1947, proved the most popular portable model among American consumers. The size of lunchboxes and priced from \$20, personals came with three-way power (AC, DC, and battery) and in an assortment of colors. Postwar consumers did not purchase portables for the quality of what they heard. Prior to the rise of FM portables in the late 1950s, portables provided only AM reception, which produced chronic static problems. Small speaker size meant poor audio reproduction. Nor did purchasers acquire portables for their longevity. Since new set models appeared every year (like automobiles) and since manufacturers endeavored primarily to attract gift-givers (who did not keep sets for themselves), designers prized aesthetics over durability when creating sets.⁵⁵ Prior to the advent of the transistor, vacuum tubes consumed considerable amounts of battery power in portables, despite the sets’ smaller size.

Several technical advances allowed set makers to alter the size, weight and appearance of receivers, enhancing their marketability but doing little to improve audio performance. The war-time development of the selenium rectifier made it possible for manufacturers to dispense with the “hot-running rectifier” in three-way portables, allowing them to shrink sets and utilize light-weight, heat-sensitive plastic. By 1950, portable set makers had migrated from leather and fabric-covered cabinets to usage of plastic. The new synthetic material reduced production costs and provided significant

flexibility, since it could be molded into any shape and color. The printed circuit, a forerunner of the integrated circuit invented during the war by Centralab, combined electronic components on a single plastic-coated ceramic wafer. First making their way into portable sets in the late 1940s, printed circuits allowed radio manufacturers to save space and reduce labor costs during production. Finally, the ferrite rod antenna, a reception coil wrapped around a ceramic-ferrite iron rod introduced by Philco in 1950, obviated the need for the much larger antenna loop and could be concealed within the receiver cabinet, streamlining the receiver's appearance.⁵⁶

Miniaturization in portable radios long preceded the arrival of the transistor radio. Norman Krim, an engineer with Raytheon, developed the first miniature vacuum tubes in March 1939; the tubes found their first market in hearing aids. During WWII, MIT's Rad Lab developed subminiature tubes for use as transceivers in proximity fuzes. Perfected by the U.S. National Bureau of Standards in 1943, the dimensions of these tubes, produced by Raytheon and Sylvania, were a mere 1.6" long by 0.3"-0.4" wide. After the war, Raytheon developed a miniature "shirt-pocket" radio using subminiature tubes, but found only a small market for the receiver. Schieffer attributes the "failure" of the shirt-pocket radio to both technical and cultural causes. Miniaturized tube radios in the immediate postwar period consumed large amounts of power and made battery changing difficult, while providing extremely poor audio performance. More importantly in Schieffer's estimation, the small radios had an image problem among American radio buyers. "The tiny pocket portable," Schieffen writes, "had no obvious place in the lifestyle of ordinary American adult in the late 1940s." Linked with hearing aids, the private listening afforded by the shirt-pocket radios seemed odd to Americans prior to 1950. Consumers

did not yet view “extreme smallness” favorably yet: “Americans on a spending spree wanted to buy large symbols of wealth, not tiny tokens of austerity.” As much as they shaped reception patterns, receivers had to match the listening habits and social environments of listeners in order to find a market.⁵⁷

The portable tube receiver, in both its larger and miniaturized forms, anticipated the transistor radio. The use of the selenium rectifier, plastic cabinetry, printed circuit, and ferrite rod antenna in portable tube radios by 1950 allowed radio manufacturers to reduce the size of sets considerably, paving the way for the transistor set. By the early 1950s, popular attitudes towards miniaturization began to change. Following the missile race with the Soviet Union and the invention of the transistor itself in 1947, miniature products started to acquire a “high tech image.” The turning point for radio electronics came in 1951, with the successful marketing of the Emerson “micro-table” model 747, the direct predecessor of the first transistor radio, the Regency TR-1, invented in 1954 by IDEA and Texas Instruments. The development of the transistor radio thus formed part of a continuum with, rather than a radical departure from, the earlier history of the portable tube receiver.⁵⁸

The Portable Radio in the Mission Field, 1945-50

The postwar period witnessed a rise in demand for portable not only among American consumers, but among missionary groups as well. Growth of transmitter facilities translated into growing awareness among evangelicals of the mass need for missionary receivers. The increased demand of evangelical mission organizations for inexpensive radios was met initially by groups of amateur Christian radio technicians and

engineers who organized themselves into electronics service agencies. Amateur missionary radio leagues typified the ethos and many of the practices of missionary radio reception. Their fervor demonstrated that the missionary radio project had widespread and deep-rooted support among rank-and-file evangelicals in the United States. Average churchgoers supported the enterprise of converting the world by radio not only by financial contributions, but through practical and technical assistance as well.

In response to the demand for broadcast-band receivers, missionary radio engineers in the late 1940s developed the first portable tube receiver specially created for use in the mission field. The “Portable Missionary Radio Receiver,” Model S5-3-345, designed and produced by Christian Radio Associates (CRA) of California, employed five tubes in a pretuned, superhet circuit for “receiving programs from Christian Missionary stations.” Unlike radio manufacturers in the United States, who catered to a booming consumer market, CRA placed little emphasis on aesthetics, prizing functionality and cost instead. To reduce shipping expenses overseas and accommodate multiple missionary users (who could add their own look), the receiver came without cabinet and included only chassis and components, thus lacking a face altogether.⁵⁹

Portable tube receivers like the CRA’s Model S5 provided a mixed set of blessings for missionaries. In the mission field, unlike the consumer market in the industrial West, the term “portable” referred solely to the usage of battery power rather than transportability. The Model S5 was anything but movable. Its antenna, 50 to 100 feet long, required elaborate rigging, while a ground wire from the receiver to a pipe driven several feet into the earth, designed to protect the radio from lightning damage, grounded the set in more ways than one. At over two pounds in weight (without batteries), and 9”

by 4 ½” by 5” in dimension, the CRA radio was not particularly light or small either. Battery operations allowed missionaries to utilize sets in remote areas without electrical mains where mission organizations in the developing world frequently operated. Yet battery usage presented major limitations of its own. Vacuum tube sets, such as the Model S5, required both 90 volt and 1.5 dry cells, either flashlight type or bulky “Farm Pack type” batteries. Since tube sets consumed large amounts of power, users had to replace such batteries regularly, a cumbersome if not impossible process in numerous mission fields. Since simply leaving the set on drained battery life drastically, the set included an on/off indicator. CRA advised radio users to remove the batteries when stored, since they could leak and damage components. Finally, maintenance posed a real challenge for users in the field. CRA included a service warranty with the Model S5, as well as a “Failure Report Form” to guide design of future models. But missionaries had to ship sets back to CRA’s factory in the United States at their own expense – hardly a convenient or speedy solution. Obtaining parts and replacement tubes overseas for the receiver proved equally impractical.⁶⁰

The availability of surplus military communication equipment after WWII was accompanied by the availability of surplus technicians who had who received radio training in the armed services. On June 20, 1947, a group of these “electronically qualified Christian Radio men” formed the Christian Radio League (CRL) in Los Angeles, California. The stated purpose of the league was to “speed the propagation of the Word of God through Missionary Radio.” “On the Mission Fields of the world there is a growing demand for all phases of Radio and Sound System work,” the league proclaimed. To meet this growing need, the volunteer amateur group offered to act as a

liaison, technical consultant, purchasing agent, and repair facility for “fundamental” missionary broadcasters and agencies, providing information, equipment, and personnel in the field of electronics.

The amateur missionary radio league rose and fell along with the short-lived surplus military radio equipment market. The CRL attempted initially to recruit personnel nation-wide, printing a brochure in December 1947 which appealed to “[b]orn-again Christians having ability in the technical phases of radio or sound systems.” The same month, Herman Dyk, the CRL’s Secretary, received twenty applications for membership.⁶¹ Earl Nelson represented a typical CRL member. A student at Biola University (Bible Institute of Los Angeles), Nelson had outfitted Douglas aircraft with radio electronics during the war and hoped to enter the mission field as a technician. On January 12, 1948, Nelson attended a meeting in which members discussed the performance and missionary potential of the BC-375 transceiver. A rugged 50-100 watt transmitter built by Douglas Aircraft for its C-53 and C-54 planes, the BC-375 could reach 1,000 miles in clear conditions. Made obsolete by rapid postwar advances in radio communications, it was now available for as little as \$35.⁶² By the end of 1948, the supply of surplus war materials and the availability of amateur technical help had almost dried up. Secretary Herman Dyk reported difficulty finding personnel to build and repair equipment.⁶³ By March 1949, the CRL had twelve men modifying its few remaining receivers one night a week in three locations, including Azusa Bible College.⁶⁴

The CRL’s main activity involved the modification of surplus point-to-point communication equipment for use by evangelical missionary agencies overseas. In addition to the BC-375, the league’s most popular units were the Crosley SCR-284, a

transmitter receiver with a hand-cranked generator available from the American government for \$45. The league found a ready outlet for such communication equipment with mission organizations in South America. In Dyk's view, outposts on the continent were "so isolated by the terrain and jungles that some form of communication is imperative."⁶⁵ South American clients included the Wycliffe Translator's Summer Institute of Linguistics in Lima, Peru, the Latin American Mission in Colombia, and the Mission Aviation Fellowship.

The CRL's activities attested to the global presence of evangelical missionary radio, beginning in 1945. In November 1947, J.O. Percy, the Acting Secretary of Sudan Interior Mission (SIM) wrote to Dyk, informing him of SIM's interest in erecting "a large radio station in Ethiopia" and asking for CRL's assistance. Dyk replied that his organization would gladly assist SIM in setting up stations, as well as in receiver maintenance.⁶⁶ In the spring of 1948, A.C. Snead, the foreign mission secretary of the Christian & Missionary Alliance (CMA), requested information about "simple fixed tuning sets" for use by CMA missionaries with the Habbe people in French West Africa.⁶⁷ Later that same year, Dyk received a letter from Howard Pettman, a volunteer engineer with a sister missionary electronics service agency in the United States. Pettman's amateur organization had begun constructing specialty electronic equipment, including a portable tape player, in order to increase missionaries' productivity and to compensate for the chronic shortage of missionary labor in the field. Pettman's agenda included construction of a radio station in Cyprus targeting the Middle East; he had recently received a request for help from missionaries interested in applying for a government permit on the Mediterranean island.⁶⁸

CRL carried on extensive correspondence with a sister group in Australia, the Christian Radio Missionary Fellowship (CRMF). The CRMF had more advanced organization than the CRL; Clarence Jones served on its advisory council and it published a regular periodical, entitled *Freedom Radio*. Members of the CRMF intended to establish a series of radio communication networks in the South Pacific archipelago surrounding Australia. The group had applied for a license with the government of Borneo to erect a 250-watt transmitting unit in Lawas. As part of their project, the CRMF designed and manufactured its own pedal-powered transmitter-receiver (transceiver), which employed a simple 5-valve superhet design and featured pretuned reception. The pedal generator of CRMF's transceiver delivered 300 volts of direct current or 6.3 volts of alternating current. In the second half of 1948, the organization began "manufacturing" of units, setting up two amateur "Construction Clubs" in Sydney and Newcastle, composed of a dozen volunteer technicians and using armature stampings produced by a local factory. The CRMF hoped to establish further assembly groups in Melbourne and Wollongong in 1949. Meanwhile, Australia's largest radio manufacturer had started conducting lab tests on a transceiver prototype.⁶⁹

CRMF's experience demonstrated that power generation posed a critical problem for missionary broadcasting systems in remote areas such as the South Pacific islands. Contact with CRL enabled the officers of the CRMF to locate an additional supply of generators. The radio manufacturer Crosley Corporation of Cincinnati had produced similar emergency transceivers for the U.S. Army Signal Corps during WWII. The CRMF purchased 30 Crosley units for \$5 apiece through Herman Dyk, rewinding their armatures and retrofitting them with pedals (since they had been originally designed as

hand machines). The world-wide demand for such transceiving receiving units among evangelical mission groups was significant; Dyk proposed unsuccessfully to Claude D'Evelynes, the CRMF Secretary, that the Australian group produce receiving sets, not only for his own group but for missionaries working outside Southeast Asia.⁷⁰

The experience of CRA and CRMF demonstrated that pre-tuning became standard on missionary broadcast receivers during the post-WWII period. Despite the overwhelming reliance of most missionary stations on shortwave service and the technical difficulty of pretuning on high frequencies, amateur evangelical radio leagues produced only pretuned broadcast receivers. The CRA's Model S5 Portable Missionary Radio Receiver came pretuned "so that it will receive only the programs from stations with which it is used on the mission field," tying usage of the set to the missionary station. Since the Model S5 Portable Missionary Radio Receiver was designed for a wide range of missionary users, many of whom broadcast on shortwave, the CRA pretuned sets at the time of manufacture to "[a]ny single fixed channel from 500 kc to 20 mc" and included a manual tuning dial to compensate for drift, a greater problem on higher frequencies.⁷¹ Similarly, the pedal-powered receivers manufactured by the CRMF came pretuned with allowance for shortwave reception – a particular necessity in Australia and the South Pacific islands, given the large distances involved. To compensate for shifting frequencies during different parts of the day, the CRMF designed receivers with "three fixed channels for tuning" and all-wave reception by adding a "wave change switch," two extra sets of coils, and a three-gang condenser. In addition, a manually operated oscillator trimmer allowed listeners to adjust for more precise tuning by hand.⁷²

The request of A.C. Snead on behalf of CMA missionaries with the Habbe people in French West Africa illuminated the rationale underlying the *de rigueur* usage of pretuned receivers by missionary organizations. CMA missionaries intended to leave “simple fixed tuning sets” in central locations in remote areas where recent evangelical converts could gather. Pretuned radios would fill multiple functions in this setting, substituting for live personnel. They would offer regular morning services complete with “singing and scripture and messages” and perform a pastoral role by helping to “fully shepherd the flock in daily services.” As an aural medium, they would reach illiterate “babes in Christ,” since none of the converts could read. By inquiring about the viability of pretuned receivers, Snead made it clear that his organization would not leave receivers behind without missionary oversight, however, unless they were pretuned. Snead himself questioned whether a pretuned arrangement could work “in such primitive country.”⁷³ Fixed tuning would prove the defining characteristic of missionary reception during the following quarter century because it ensured regularized listening and listener capture.

Conclusion

Between 1945 and 1954, evangelical broadcasting became an international field. The supply of materials and personnel from WWII, coupled with the promotion and training efforts of Clarence Jones, resulted in an unprecedented expansion of global missionary transmitting networks. The growth of missionary stations around the world for the first time provided the rationale for missionary radio reception during the following quarter century. The rapid increase in missionary stations produced an increased demand for missionary receivers in numerous locations, met in small part by

amateur groups such as the CRA, CRL, and CRMF who specialized in distributing surplus military equipment and custom-built portable receivers. Despite the wholehearted efforts of volunteer electronics service agencies, evangelicals failed to find a large-scale global solution to the problem of missionary radio reception before 1950.

The immediate postwar years represented an important chapter in missionary radio reception since it marked the arrival of private religious broadcasting as a field of international activity. For the first time, radio reception became a widespread, even a global, concern among conservative evangelical stations and mission groups, thanks in part to the promotional work of Clarence Jones. The period witnessed the advent of pretuned reception in the mission field – a distinctive, even defensive response by evangelicals to broad, irreversible changes in the international broadcasting environment which resulted in significant competition for listeners and technological opportunity. The immediate postwar years saw not only the formal articulation of an ambitious plan to build a missionary receiver for the masses, but the initiation of concrete steps to realize the plan by both Clarence Jones and evangelical radio amateur leagues. That such steps did not produce immediate tangible results revealed important limitations in existing receiver tube technology and commercial manufacturing arrangements, while at the same time highlighting the permanence of certain receiver parameters, such as pretuning, which carried over into the subsequent period as enduring hallmarks of missionary radio reception.

Ironically, the pursuit of Jones's global radio vision was accompanied by Jones's own inactivity in Ecuador. From 1945 to 1949, the Radio Circle lapsed into inactivity. Two factors help explain Jones's neglect of the Radio Circle after the war. On furlough in

the United States, Jones focused his attention on raising funds for HCJB's transmitter expansion program, estimated to cost nearly \$225,000.⁷⁴ Second, following the war's end, commercial houses in Ecuador became more interested in importing sets, expanding the domestic receiver market in Ecuador and partially reducing the need for sets from the station.⁷⁵ The next step forward for the Radio Circle would come from an unexpected quarter within HCJB and would represent a reversal in certain respects of the direction undertaken during the department's first decade under its founder Clarence Jones. The revival of the Radio Circle under new leadership represented the next major move forward in the global evangelical effort to provide missionary reception for the masses.

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- ¹ Michael Brian Schieffer, *The Portable Radio In American Life* (University of Arizona, 1991).
- ² Marvin Bensman, "The History of Broadcasting, 1920-1960: Radio Homes," *The Bensman Radio Program Archive*, <https://umdrive.memphis.edu/mbensman/public/>, December 12, 2004.
- ³ Clarence Jones, "A Survey of Religious Broadcasting in the 20 Countries of Latin America," February 15 - July 8, 1945, "History – Organization (A12)," HCJB.
- ⁴ Clarence Jones, "A Survey of Religious Broadcasting in the 20 Countries of Latin America," February 15 - July 8, 1945, "History – Organization (A12)," HCJB.
- ⁵ Clarence Jones, "A Survey of Religious Broadcasting in the 20 Countries of Latin America," February 15 - July 8, 1945, "History – Organization (A12)," HCJB.
- ⁶ Per capita radio receiver ownership figures for the next highest Latin American countries are as follows: Uruguay (7.9%); Chile (4.8%); Brazil (2.9%). Source: Clarence Jones, "A Survey of Religious Broadcasting in the 20 Countries of Latin America," February 15 - July 8, 1945, "History – Organization (A12)," HCJB, 12.
- ⁷ Clarence Jones, "A Survey of Religious Broadcasting in the 20 Countries of Latin America," February 15 - July 8, 1945, "History – Organization (A12)," HCJB.
- ⁸ Letter from Clarence Jones to Reuben Larson, January 31, 1944, File 364 ("Correspondence CWJ and R.E. Larson 1944"), HCJB.
- ⁹ Letter from Clarence Jones to Reuben Larson, January 31, 1944, File 364, HCJB.
- ¹⁰ Letter from Reuben Larson to Clarence Jones, February 9, 1944, File 365 ("Correspondence to CWJ from R.E. Larson 1944"), HCJB.
- ¹¹ Letter from Clarence Jones to Reuben Larson, December 8, 1944, File 364, HCJB.
- ¹² Letter from Clarence Jones to Reuben Larson, December 8, 1944, File 364, HCJB.
- ¹³ Letter from Reuben Larson to Clarence Jones, Letter 51, no date available, File 365, HCJB.
- ¹⁴ Letter from Reuben Larson to Clarence Jones, Letter 51, no date available, File 365, HCJB.
- ¹⁵ Clarence W. Jones, "HCJB Post War Expansion Plans," *The Radio Missionary Log*, Vol 1, No. 4, Sept/Oct 1944, 3-4; letter from Clarence Jones to Reuben Larson, November 14, 1944, File 364, HCJB.
- ¹⁶ *Time*, October 9, 1944.
- ¹⁷ Letter from Clarence Jones to Reuben Larson, August 22, 1944, File 364, HCJB.
- ¹⁸ Clarence W. Jones, "HCJB Post War Expansion Plans," *The Radio Missionary Log*, Vol 1, No. 4, Sept/Oct 1944, 3-4.
- ¹⁹ Jones's breakdown of expected demand is as follows: Paraguay - 12,000 sets; Colombia, Venezuela, Cuba, Chile – 12,000 sets each; Central America and West Indies – 24,000 sets total. Source: Clarence Jones, et al, "Outline of a Project To Provide Small and Low-Priced Radio Receiving Sets to the Underprivileged Masses of Latin America and Elsewhere", undated (likely early November 1944), File 369 ("Calderon & Pinchincha Reports"), HCJB. The report is likely attached to letter from Clarence Jones to Reuben Larson, November 14, 1944, File 364, HCJB.
- ²⁰ Clarence Jones, et al, "Outline of a Project To Provide Small and Low-Priced Radio Receiving Sets to the Underprivileged Masses of Latin America and Elsewhere", undated (likely November 1944), File 369, HCJB.
- ²¹ Letter from Clarence Jones to Reuben Larson, November 14, 1944, File 364, HCJB.
- ²² Letter from Clarence Jones to Reuben Larson, November 14, 1944, File 364, HCJB.
- ²³ Letter from Clarence Jones to Reuben Larson, November 14, 1944, File 364, HCJB.
- ²⁴ Clarence Jones, "A Survey of Religious Broadcasting in the 20 Countries of Latin America," February 15 - July 8, 1945, "History – Organization (A12)," HCJB.
- ²⁵ Clarence Jones, "A Survey of Religious Broadcasting in the 20 Countries of Latin America," February 15 - July 8, 1945, "History – Organization (A12)," HCJB.
- ²⁶ Clarence Jones, "A Survey of Religious Broadcasting in the 20 Countries of Latin America," February 15 - July 8, 1945, "History – Organization (A12)," HCJB.
- ²⁷ Clarence Jones, "A Survey of Religious Broadcasting in the 20 Countries of Latin America," February 15 - July 8, 1945, "History – Organization (A12)," HCJB.
- ²⁸ Letter from Clarence Jones to Reuben Larson, October 15, 1945, File 375, HCJB.
- ²⁹ Letter from Clarence Jones to Reuben Larson, November 16, 1945, File 375, HCJB.

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- ³⁰ Letter from Clarence Jones to Reuben Larson, December 28, 1945, File 375, HCJB.
- ³¹ Letter from Clarence Jones to Reuben Larson, February 25, 1946, File 409 ("Background Material for *Come Up to This Mountain*"), HCJB.
- ³² Letter from Clarence Jones to Reuben Larson, February 25, 1946, File 364 ("Correspondence CWJ and R.E. Larson 1944"), HCJB.
- ³³ Quentin Schultze, "Evangelicals' Uneasy Alliance with the Media" in Daniel A. Stout and Judith M. Buddenbaum, eds., *Religion and the Mass Media: Audiences and Adaptations* (Sage, 1996).
- ³⁴ Michael Brian Schiffer, *The Portable Radio in American Life* (University of Arizona, 1991), Chapter 12, and "Cultural Imperatives and Product Development: The Case of the Shirt-Pocket Radio," *Technology and Culture* 34 (1993): 98-113.
- ³⁵ Letter from Clarence Jones to Reuben Larson, September 7, 1945, File 374, HCJB.
- ³⁶ Committee for Cooperation in Latin America, "Religious Broadcasting in Latin America: Recommended Program and Estimate of Cost," December 10, 1945, Folder 165, Box 1, Collection 31, BGCA.
- ³⁷ Robert Frederick Swenson, "An Oral History of Dr. Clarence W. Jones," February 21, 1977, Folder 12, Box 9, Collection 349 (Clarence Wesley Jones – Papers), BGCA, 40.
- ³⁸ Osborne Buchanan states that Jones started publication of *Foreign Missionary Radio* in 1946, but Jones cites the publication in a letter to Reuben Larson dated August 22, 1944. Source: Osborne Blunden Buchanan, "A Study of the Pioneer Missionary Radio Station, HCJB" (Master's thesis, Kennedy School of Missions, Hartford Seminary Foundation, 1962).
- ³⁹ Open letter from Clarence Jones to "Fellow-Broadcasters of the Gospel," December 12, 1937, Collection 407, HCJB.
- ⁴⁰ Nancy Woolnough, "C.W. Jones: Citation Facts for NRB," January 1, 1975, File 355 ("Dr. C.W. Jones"), HCJB.
- ⁴¹ Osborne Blunden Buchanan, "A Study of the Pioneer Missionary Radio Station, HCJB" (Master's thesis, Kennedy School of Missions, Hartford Seminary Foundation, 1962), 266.
- ⁴² Letter from Clarence Jones to Reuben Larson, July 31, 1945, File 374, HCJB.
- ⁴³ Letter from Clarence Jones to Reuben Larson, September 7, 1945, File 374, HCJB.
- ⁴⁴ Osborne Blunden Buchanan, "A Study of the Pioneer Missionary Radio Station, HCJB" (Master's thesis, Kennedy School of Missions, Hartford Seminary Foundation, 1962), 374-377.
- ⁴⁵ James Wood, "Profile of the tube manufacturing industry," in *History of International Broadcasting*, Vol. 1, 220-21.
- ⁴⁶ Letter from Clarence Jones to Reuben Larson, September 7, 1945, File 374, HCJB.
- ⁴⁷ The precise expansion of the station's five transmitters was planned to occur as follows: 308 meters – from 1 Kw to 1 Kw; 73 meters – from 1 Kw to 10 Kw; 24 meters – from 10 Kw to 50 Kw; 31 meters – from 1 Kw to 50 Kw; 49 meters – from 1 Kw to 10 Kw. The total cost of the project was estimated at \$222,900.
- ⁴⁸ James Schwoch, *The American Radio Industry and Its Latin American Activities, 1930-1939* (University of Illinois, 1990).
- ⁴⁹ Eugene Berterman, "Missionary Radio Directory," Report of the Second Conference on Missionary Radio, June 12-14, 1956, Folder 16, Box 34, Collection 86, BGCA, 56-58; Barnard M. Luben, "The Development of Missionary Radio," *The Christian Broadcaster*, Vol. XIII, No. 2, July 1966, 10-14.
- ⁵⁰ Abe Thiessen, "Keynote Address," Missionary Transistor Research Meeting, April 30, 1956, Folder 12, Box 27, Collection 86, BGCA; Abe Thiessen, "A Radio Set in Every Village," undated (1957?), Folder 16, Box 33, Collection 86, BGCA.
- ⁵¹ Marvin Bensman, "The History of Broadcasting, 1920-1960: Radio Homes," *The Bensman Radio Program Archive*, <https://umdrive.memphis.edu/mbensman/public/>, December 12, 2004.
- ⁵² Michael Brian Schiffer, *The Portable Radio in American Life* (University of Arizona, 1991), Chapter 10.
- ⁵³ Michael Brian Schiffer, *The Portable Radio in American Life* (University of Arizona, 1991), Chapter 10.
- ⁵⁴ Michael Brian Schiffer, *The Portable Radio in American Life* (University of Arizona, 1991), Chapter 10.
- ⁵⁵ Michael Brian Schiffer, *The Portable Radio in American Life* (University of Arizona, 1991), Chapter 10.
- ⁵⁶ Michael Brian Schiffer, *The Portable Radio in American Life* (University of Arizona, 1991), Chapter 10.
- ⁵⁷ Michael Brian Schiffer, *The Portable Radio in American Life* (University of Arizona, 1991), Chapter 12. See also Michael Brian Schiffer, "Cultural Imperatives and Product Development: The Case of the Shirt-Pocket Radio," *Technology and Culture* 34 (1) 1993, 98-113.

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- ⁵⁸ Michael Brian Schiffer, *The Portable Radio in American Life* (University of Arizona, 1991), Chapter 12. See also Michael Brian Schiffer, "Cultural Imperatives and Product Development: The Case of the Shirt-Pocket Radio," *Technology and Culture* 34 (1993): 98-113.
- ⁵⁹ Christian Radio Associates, "Portable Missionary Radio Receiver, Model S5-3.3435 - Service Manual," undated (ca. late 1940s), Folder 20, Box 33, Collection 86, BGCA.
- ⁶⁰ Christian Radio Associates, "Portable Missionary Radio Receiver, Model S5-3.3435 - Service Manual," undated (ca. late 1940s), BGCA, Folder 20, Box 33, Collection 86, BGCA.
- ⁶¹ Letter from J.O. Percy to Herman Dyk, November 5, 1947, Folder 29, Box 34, Collection 36, BGCA.
- ⁶² Letter from Earl W. Nelson to C.J. List, January 13, 1948, Folder 29, Box 34, Collection 36, BGCA.
- ⁶³ Letter from Herman Dyk to Claude D'Evelynes, November 2, 1948, BGCA, Folder 29, Box 34, Collection 36, BGCA.
- ⁶⁴ Letter from Herman Dyk to Robert Hartnell, February 2, 1949 and letter from Herman Dyk to Donald Stark, March 28, 1949, Folder 29, Box 34, Collection 36, BGCA.
- ⁶⁵ Letter from Herman Dyk to Robert Hartnell, February 2, 1949, Folder 29, Box 34, Collection 36, BGCA.
- ⁶⁶ Letter from Herman Dyk to J.O. Percy, December 3, 1947, Folder 29, Box 34, Collection 36, BGCA.
- ⁶⁷ Letter from A.C. Snead to Herman Dyk, April 8, 1948, Folder 29, Box 34, Collection 36, BGCA.
- ⁶⁸ Letter from Howard Pettman to Herman Dyk, November 13, 1948, Folder 29, Box 34, Collection 36, BGCA.
- ⁶⁹ Letter from Claude D'Evelynes to Herman Dyk, July 8, 1948, BGCA; letter from Herman Dyk to Claude D'Evelynes, November 2, 1948 and letter from Robert Hartnell to Herman Dyk, January 10, 1949, Folder 29, Box 34, Collection 36, BGCA.
- ⁷⁰ Letter from Claude D'Evelynes to Herman Dyk, July 8, 1948; letter from Herman Dyk to Claude D'Evelynes, November 2, 1948; and letter from Robert Hartnell to Herman Dyk, January 10, 1949, all in Folder 29, Box 34, Collection 36, BGCA.
- ⁷¹ Christian Radio Associates, "Portable Missionary Radio Receiver, Model S5-3.3435 - Service Manual," undated (ca. late 1940s), Folder 20, Box 33, Collection 86, BGCA.
- ⁷² Letter from Claude D'Evelynes to Herman Dyk, July 8, 1948, BGCA; letter from Robert Hartnell to Herman Dyk, January 10, 1949, Folder 29, Box 34, Collection 36, BGCA.
- ⁷³ Letter from A.C. Snead to Herman Dyk, April 8, 1948, Folder 29, Box 34, Collection 36, BGCA.
- ⁷⁴ Letter from Clarence Jones to Reuben Larson, December 8, 1944, File 364, HCJB.
- ⁷⁵ Frank Cook forwards this explanation in *Seeds in the Wind: The Story of the Voice of the Andes, Radio Station HCJB, Quito, Ecuador* (World Radio Missionary Fellowship, 1961), Chapter 5.

Chapter 5

The Revival of the Radio Circle, 1949-59

Introduction

At the close of WWII, Clarence Jones articulated a clear global vision for the expansion of missionary radio, including a plan to mass produce missionary receivers. Due to Jones's leadership of the global missionary broadcasting movement, the pioneer broadcaster's local involvement with HCJB in Ecuador diminished almost completely. Though originated by Jones in 1935 and overseen by him through WWII, the revitalization of HCJB's receiver program, the Radio Circle, between 1949 and 1959 fell to another man, Marion Krekler. Krekler's obscurity, coupled with his personal determination to supply poor Ecuadorans with receivers, demonstrated forcefully that the missionary radio project was not merely the brainchild of a few significant evangelical leaders, but enjoyed wide support among common missionaries who translated the vision of missionary broadcasting into practical action.

The history of the revived Radio Circle program from 1949 to 1959 merits study for several reasons. The narrative of the Radio Circle from 1949 to 1959 demonstrates the heterogeneity of missionary radio reception, which followed multiple paths of technological development. During the period, the receiver department deployed a wide range of radio models, employing a variety of power sources in different locations across the country of Ecuador. The experience of the Radio Circle simultaneously underscores the centrality of pretuned reception for missionary broadcasters. Despite their diversity, the department implemented the feature of fixed tuning on all its sets in order to capture

large audiences. Most importantly, Radio Circle workers developed a complex system of listener relations, built around the placement, installation, and servicing of pretuned “Mechanical Missionaries,” that evinced the logic of missionary capture – a logic that blurred simple boundaries between the technical, cultural, and social realms. Missionary reception involved an extensive relationship between broadcasters and listeners centered on the material receiver and which extended beyond the simple habit of “listening in.” Evidence produced by the station supported officials’ view that pretuned radios, coupled with station contact, altered attitudes of Ecuadorans towards evangelicalism and facilitated the process of evangelical conversion.

The Reinvention of the Radio Circle, 1949-59

The resuscitation of the Radio Circle in 1949 was the work not of Clarence Jones, but of Marion Krekler, a missionary radio technician who had previously worked in HCJB’s studio. In 1947, Krekler went on furlough in the United States. On his own initiative and employing his own funds, Krekler ordered parts for 200 crystal receivers in America and arranged to have them shipped to Quito through HCJB’s New York office. Unaccountably, the materials sat in New York for two years. Meanwhile, having returned to Ecuador, Krekler began building bases for the sets from old packing boxes in his spare time. When the parts eventually arrived in 1949, Krekler started assembling sets in his living room. The size of a mousetrap at less than three by five inches, the listening devices employed the crudest of reception technology: a galena crystal, a tapped coil, and a few connecting wires attached to a set of earphones. In 1950, Krekler secured the part-time help of an Ecuadoran boy named Hernan in putting together sets. Demand kept pace with output; soon, according to the station, “a steady stream of poor folks” came to

Krekler's home "begging for sets."¹ The same year, Clarence Jones formally recognized the revival of the station's receiver program, making the Radio Circle an official, separate department of HCJB and approving construction of a small radio workshop on station grounds, overseen by Krekler.²

An article in HCJB's monthly periodical, *Call of the Andes*, dated September 1950, described how the station employed the new crystal sets. Entitled "Baited with the Gospel," the article's anonymous author compared the receivers to mousetraps, which the sets resembled in size and physical appearance. With extremely weak sensitivity and no amplification, the simple receivers could only detect the station at very close proximity. The inexpensive device ensured that listeners could only pick up the gospel station through the use of a fixed ceramic tuning condenser, ensuring a regular audience. The author deliberately compared capturing listeners to capturing mice. "The "catch," the author wrote, is that "[the sets] can only be tuned to HCJB, which means that [audiences] must listen to the Gospel over and over again."³

Krekler's simple devices proved popular and effective on a limited scale. By September 1950, Krekler had placed 125 crystal sets in neighborhood homes within 5 miles of the station. Krekler had 20 more sets ready to distribute, with parts for an additional 200 on hand. For payment method, Krekler settled on a "gift-loan" policy. Families could keep the inexpensive sets for free on two conditions: they could not sell them or remove them from the community. Crystal sets provided Krekler with opportunities for evangelism. At the time of distribution, Krekler handed recipients a New Testament and gospel literature. Krekler also checked sets regularly for service and to maintain family contact. To finance the "mousetrap" program, the author of the *Call of*

the Andes article solicited funds from American readers: \$5.00 would pay for a set, headphones, New Testament, and Gospel.

The small-scale success of Krekler's earphone set program in the Quito area demonstrated that radio listening in the mission field did not follow a simple pattern. Unlike Clarence Jones's earlier initiative in 1935, which capitalized on communal listening, Krekler took advantage of inexpensive crystal technology to encourage individualized, private listening – ironically, a half decade before American consumers endorsed such listening habits. Prior to WWII, Jones had not considered the pretuning measure necessary; Jones's mass missionary receiver project had envisioned, but not actually built pretuned radios. Krekler's "mousetrap" sets therefore represented the first practical implementation of an enduring component of HCJB's revived receiver program - fixed reception tuning. Krekler's over-riding purpose for distributing "mousetrap sets" was proselytization, which he pursued through several avenues, including literature distribution and service calls. In this sense, crystal receivers served as a mere wedge for further personal interaction with listeners. Krekler gave sets away on strict conditions forbidding resale or relocation in order specifically to restrict the movement of sets and facilitate tracking their location.

Krekler's distribution of "mousetrap" sets led unexpectedly to a revival of HCJB's Radio Circle receiver program. Between 1950 and 1953, the receiver department began assembling loudspeaker sets for the first time employing conventional tube technology. According to the station's account, demand for such radios arose from households who had received crystal sets and wanted to hear the station's programs *en famille*. The revived department operated on a barebones basis. The Radio Circle

imported parts, including tubes and coils, from the United States and obtained aluminum for the chassis and cabinets from old “electrical transcription discs,” which it melted down after peeling off the acetate recording layer. Sets employed a simplified TRF design, substituting two pretuned RF transformers for the antenna coil, converter, and intermediate (IF) transformers found in superhet circuits, which were considered standard components of radios manufactured in the United States for American consumers.⁴ To power its two amplifiers, loudspeaker sets (unlike crystal earphone sets) utilized either battery or electric mains (110 volts AC or DC). Despite their more limited sensitivity, listeners could use tube sets throughout Ecuador, provided they could obtain power. To pay for the significantly more expensive radios, staff members initiated the station’s first payment plan; purchasers paid 5 sucres (\$.30) a month over two years for a total cost of 120 sucres (\$7.20). The purchase price represented a considerable sum for most Ecuadorans, as well as for the Radio Circle department; the station subsidized roughly half the set’s cost through funds obtained from American donors.⁵

Thanks to Krekler’s initiative, HCJB had a vibrant, diversified receiver program in place by the fall of 1954. The Radio Circle developed a mosaic of set types, ranging from crystal earphone receivers to a wide variety of loudspeaker sets (including AC/DC electric sets, and dry cell sets) and wired loudspeaker systems. In September 1954, the Radio Circle department listed 736 sets placed in individual homes.⁶ Of these, crystal receivers comprised more than half (543), with 115 electric sets and 78 dry cell, or battery sets. The station had recently begun work assembling an additional 1,000 electric sets, half of which were “practically finished” as of late 1954 and ready for distribution. The station faced considerable demand for its receiver products. The Radio Circle

department had a waiting list of nearly one thousand people (939) in the fall of 1954.⁷

Station workers needed to do little marketing. As one staffer stated:

“I have virtually hardly asked anyone if they wanted a radio. Many hundreds are on the waiting list. Many come many times.”⁸

Demand came from Ecuadoran nationals who approached the Radio Circle office directly requesting sets.

Set “placement” represented a critical consideration for Radio Circle workers. The department kept a detailed list of the names and addresses of individual homes where it had placed every set. In addition to the seven hundred sets placed in individual homes, HCJB placed wired loudspeaker sets in strategic public locales or closed settings, where they functioned like public address systems. Audiences included, in Krekler’s handwritten notations, “school boys, maids, missionarys [sic], hospital..., indian clinic, + workers.” The station placed speakers in every room of its Rimmer Memorial Hospital (30 in total).⁹ Workers installed 17 loudspeakers at the Army post near Quito, locating them in recreation rooms, barbershops, kitchens, dining rooms, and shoe shop.¹⁰ Ecuadorans could also find HCJB wired receivers in a wide range of public sites, including the Quito jail and penitentiary and police barracks, community centers (such as Quito’s Cancer Center), various offices and shops, such as hot-dog vendors and drug stores, schoolrooms, and road construction camps.¹¹

The proliferation of the Radio Circle’s receivers can be partly attributed to a subtle, but significant, shift in placement policy. Not only did the department provide sets to female, as well as male, owners for the first time, but they distributed them “to believers and non-believers alike.” Given the relative abundance of sets produced by the station (compared with the number of sets in the lean pre-war period), officials now

viewed radio ownership itself as a tool of evangelization. Since all the station's radios came pretuned, station officials no longer worried about listeners abusing sets by listening to programs from other stations. By removing the need to socially control listening habits, pretuned technology allowed station officials to more easily expand the range and size of their local captive audience.

The location of receivers, particularly their distance from the station, heavily influenced the type of set placed by the station. Given their limited range, Radio Circle workers placed crystal sets within close proximity of HCJB's transmitters. Two-thirds of the department's simplest reception devices (355 of 543) could be found in the capitol city, while the remainder were located in nearby villages, such as Inca, Cetecellae, Yaruqui, Checa, Calderon, Ascazubi, Pifo, and Tababela. The smaller number of electric sets (115) had similar local usage due to power requirements. The station placed roughly three-fourths of electric sets in Quito, with the remainder in larger population centers with electrical service, such as El Inca, Ibarra, Pifo, Cetecellae, and Tabacundo. The usage of battery power allowed station officials to reach distant parts of Ecuador without electricity. Of the 78 total battery sets placed by the Radio Circle, only 2 were located in Quito. The remainder had been placed in a series of small villages and remote locations, some as far as "8 days back in Amazon jungle... (100 miles away)."¹²

The distribution of radios by the Radio Circle provides evidence of the level of HCJB's set penetration in Ecuador by 1954. Distribution patterns demonstrated that the Radio Circle possessed its greatest influence close to the station, where the department provided the largest numbers of its crystal and electric sets. The number of receivers provided by the station dropped off considerably with distance, as the station distributed

the smallest number of radios in the remoter areas of the country. Despite the rhetoric of advocates such as Jones that radio could penetrate all barriers, difficulty of access, coupled with the continual need of battery-powered receivers for fresh cells, proved a significant practical obstacle to the spread of the “limitless medium” of radio. Servicing of sets proved a similar limitation on set distribution. A note by Krekler indicated that it took large amounts of time and manpower to reach and collect sets in distant locations: “4 days to cover one village & sets – 5 or 6 retained.”¹³ Taken together, the power and maintenance requirements of vacuum tube receivers severely restricted their use and hampered the efforts of the Radio Circle department.

Despite their considerable variety, Radio Circle receivers in the early postwar period shared one significant trait in common. From 1949 to 1959, all sets produced and distributed by HCJB came pretuned to the station. Krekler used slug tuning to pretune the Radio Circle’s first sets. The core of tuning coils had threaded shapes, or slugs, which were soldered to the shield can. At first, Krekler manually adjusted the slug with a screwdriver to tune in the station’s frequency. Because owners often tampered with sets in an attempt to retune them, however, Radio Circle officials made a change by 1954 in pretuning practice. Workers henceforth sealed slugs inside tuning coils, making it nearly impossible for listeners to retune sets without damaging them beyond operation.

HCJB’s directors had several rationales for adopting pretuned reception after 1949. Overall, use of pretuned radios met several strategic requirements. Pretuned sets satisfied the demands of conservative evangelical American supporters, including program sponsors and rank-and-file contributors, that HCJB utilized their sponsored programs and donated funds appropriately. American missionaries working in Ecuador

requested pretuned receivers from the station, set either to HCJB or to their own Quechua broadcasts (which originated from remote low-power transmitters in the Amazon jungle). Pretuned sets allowed officials to distribute radios for the first time to non-Christians as well as believers. Use of pretuned receivers also obviated competition with the growing number of national, regional, and international broadcasters who increased dramatically after 1945 with the expansion of receiver ownership on the Latin American continent. Thus, a technically simple and economically inexpensive step enabled HCJB officials to satisfy core constituencies and meet cultural priorities at a relatively low opportunity cost, namely the loss of freedom for lower-income listeners. In a market with limited supplies of cheap sets and considerable receiver demand on the bottom end of the economic spectrum, pretuned technology represented a nearly irresistible option for Radio Circle staff, allowing them to simultaneously satisfy key supporters, fulfill its primary mission, and grow its listening audience at minimal expense.

In addition to pretuning, the Radio Circle under Krekler's direction made another significant long-term decision. When Krekler expanded the Radio Circle in 1950, he elected to sell his tube radios to interested Ecuadorans on modest, subsidized terms rather than give them outright on a quasi-loan basis, as he had done with crystal sets. By 1954, the Radio Circle sold all its receivers (with the exception of its public wired loudspeaker systems). Officials justified the move on utilitarian grounds. Turning the radio into an exchange commodity, staff workers believed, increased its use value to listeners by requiring them to make a monetary investment. When they paid for their radios, Krekler argued, "folks appreciate and protect them more."¹⁴ The station of course moderated the effect of the market in order to increase the number of listeners, selling sets at a

subsidized price on terms and waiving the down payment waived in hardship cases.

Subsidizing receivers meant that the Radio Circle operated at “quite a loss, percentage wise,” a difference which it had to make up through independent fund-raising in America.¹⁵

The Radio Circle’s sale policy represented a blend of commercial and paternalistic elements. HCJB commercialized its receiver program much earlier than other missionary broadcasters. Yet the manner in which the station introduced the market mechanism perpetuated a relationship of dependence between the Ecuadoran nationals and the station. Even if they wanted to do so, Ecuadorans buying station sets had difficulty avoiding direct contact with HCJB personnel. HCJB paid for half the cost of the radio and stretched out a payment schedule over two years, requiring listeners to interact constantly with Radio Circle officials. Station workers continued to rely on traditional methods involving face-to-face contact with listeners to collect payments. Set owners either paid in person at the Radio Circle office every month or a Radio Circle employee or missionary visited homes to take monies directly. Thus, the introduction of a modified cash nexus did not disrupt, but extended interactions between station workers and listeners. By subsidizing the sale price of radios, the Radio Circle department placed itself in a similar position of dependency, since station officials relied heavily on American donations to finance its receiver program.

“Mechanical Missionaries” Multiply Effectiveness

Radio Circle workers utilized every aspect of the station’s receiver program - from set distribution and installation to receiver maintenance - as a pretext for evangelization. “Mechanical Missionaries,” as the station termed pretuned radios, functioned as proselytizing agents in several, overlapping capacities, blurring any simple distinction between the purely technical and cultural realms of missionary broadcasting.

The station utilized the demand for receivers among lower-income Ecuadorans as “attractive bait” to draw listeners. In 1950, radios represented relatively scarce and valuable commodities for many of the poorer residents inhabiting Quito and its environs. Officials assumed axiomatically that set scarcity translated readily into widespread desire among lower-class Ecuadoran nationals for Radio Circle receivers, even though sets came with only one station.ⁱ “How he [the blacksmith] would love to have a little set just like that one!,” a promotional account entitled “Radio Circle Story” ran. “Others in the village shared the same desire to possess a radio in their own homes,” a second account designated for American readers ran.¹⁶ Another set of publicity facts celebrated set ownership: “It is a happy day for many when they have enough money to purchase their HCJB radio..... their Mechanical Missionary.”¹⁷ HCJB considered that the first radios owned by many Ecuadorans were pre-tuned radios.¹⁸ According to HCJB, poorer Ecuadorans nationals prized radios over their other material possessions:

“The people may not have much, but with their first money they buy a good radio... You might meet a man coming out of the jungle with a minimum amount of clothing on, but more than likely he’ll be carrying his prized radio.”¹⁹

ⁱ Doug Peters, a future director of the Radio Circle, stated that he commonly sold the station’s pretuned radios to Ecuadorans in public markets by half-seriously telling interested buyers the radios picked up two stations – HCJB and the Voice of the Andes.

In the station's account, radio owners believed that ownership of scarce sets conferred a degree of prestige.

Demand for sets produced concrete opportunities for personal evangelism. As the waiting list for the station's sets grew to hundreds, a "constant stream of persons" came by the Radio Circle workshop "begging" for a set, each visit affording an opportunity for evangelical witness: "Every time they put in an appearance there was an opportunity afforded the missionary and the national believers who worked in the shop to preach Christ to them."²⁰

In addition to demand for sets, Radio Circle workers utilized set installation as a significant pretext to evangelize listeners. Installing a set involved a significant technical operation, hooking up an antenna wire, securing a ground, and attaching battery leads. Since their size had to match the station's wavelength, long-wave antennas as long as 100 feet required no small attention. Along with ground connections, antenna wires made station sets highly immovable – an advantage to Radio Circle workers attempting to track sets. The Radio Circle had all sets installed by the department's evangelical Ecuadoran workers – "our own National helpers" – thereby insuring initial contact with the owner by a fellow countryman. During installation, workers also "instruct[ed] the one receiving the set how it operates."²¹ Installation by Radio Circle staff provided a ready-made opportunity for personal evangelism: "it is a chance to explain the need for Christ as Saviour [sic] and leave plenty of literature in the home." Visits by workers occasionally involved as much as "four hours of speaking" and produced direct conversions. In addition to providing oral testimony, missionary workers left scripture portions, gospel tracts, New Testaments, and Bibles with listeners in their homes. The Radio Circle gave

“a tremendous amount of literature” and rarely bought “less than 500 of any tract or portion.”²² In the mission field, electronic media thus built upon and reinforced, rather than supplanted, earlier usage of the print medium. In addition to evangelism, set installation provided a critical means to track and monitor receivers: “Only this way,” commented one worker, “do we have a chance of knowing where the set is and visiting the home again.”²³

Radio Circle workers developed an extensive home visitation plan to track listeners and follow up on converts. The department maintained an extensive list of addresses where sets had been placed in order to insure continual set monitoring. Home visits allowed workers to continuously locate receivers after initial installation, since owners and sets occasionally moved. In 1958, John Clark, the brother of Stuart Clark and a CMA missionary without formal radio training, succeeded Marion Krekler as head of the Radio Circle. Clark’s selection testified to the importance of the department’s spiritual (as opposed to purely technical) activities. Clark set the tone for the department, making regular visits himself to the homes of Radio Circle “members,” nominally to inspect sets, but more fundamentally to check up on and proselytize listeners. The final component of the station’s “follow-up” program, Radio Circle workers channeled new converts to the nearest evangelical church or mission and enrolled literate converts in a radio courses offered by HCJB’s Bible Institute of the Air, such as “Luz de Vida,” a study of the Gospel of John.²⁴

As a constantly consumed resource, batteries provided the Radio Circle with a continuous tie to listeners. Battery sets proved the easiest receivers for workers to track because owners had to either return to the station regularly for new dry cell, or else

receive a visit by the station. The Radio Circle encouraged owners to rely on their department for batteries, since this dependence provided a further opportunity for evangelization either on the station's grounds or at home. "We want the people to buy the battery from us or other missionaries," Radio Circle staff member Kermit Beougher made clear, "so that we will have the further contact with them."²⁵ Though listeners did not know it, the department in fact wired its battery sets to ensure listener dependence: "Our engineers have so constructed the radios that it is almost impossible for people to use any batteries except those we sell in the special little cartons."²⁶ Battery visits blurred the line between technical and cultural assistance: "we check the dry cell and battery and the aerial and ground wires and then have a conversation about Spiritual things." Radio Circle representatives checked not only listeners' dry cells, but their religious condition as well.

Along with battery replacement, set maintenance provided a pretext for ongoing listener contact and evangelization. Proprietary repair by the Radio Circle insured continual interaction between listeners and the station. "Subscribers" in the station area had to bring sets directly to the Radio Circle for repairs.²⁷ In areas covered by mission groups, individual missionaries brought in sets to the HCJB compound for maintenance, while the Radio Circle sent a repairman to tour distant areas where multiple sets existed. During the 1950s, a missionary checked on sets every 2-3 months.²⁸ Constant repairs and inspection of sets *in situ* afforded "legitimate excuses" to HCJB repairmen to enter homes where "a word of testimony, a tract, a prayer" was given.²⁹ The "ingenious plan of 'follow-up'" devised by the department provided an optimal pretext for proselytizing. A worker described how this service plan operated:

“Missionaries and nationals are constantly visiting the homes where these sets have been placed. ‘Buenos dias, Senor – how is your radio working today? How many hours do you listen each day? Which programs are your favourites?’ And thus a conversation is started which provides a natural introduction to talk about spiritual things.”³⁰

By providing free maintenance, the Radio Circle encouraged set owners to contact and return regularly to the station. The Radio Circle’s repair policy also discouraged users from tampering with sets in order to alter the receiver’s pretuned frequency. If owners had not opened the set, the station provided free maintenance, charging only for the factory cost of parts (retail minus 20%). Otherwise, the Radio Circle billed labor plus the full retail price for materials.

The extensive efforts of the Radio Circle department to proselytize through the distribution of radios demonstrates that radio broadcasting in the mission field, at least in local areas, was far from a purely cultural phenomenon. Not only did pretuned radio receivers allow broadcasters the opportunity to capture listeners, but the materiality of radio as a technical artifact provided opportunity for myriad physical interactions between broadcasters and their audiences. The experience of the Radio Circle in fact demonstrated the futility of distinguishing between the purely material and spiritual dimensions of the relationship between broadcasters and listeners. Krekler closely connected the Radio Circle’s technical and spiritual activities in 1957: “When our men are installing sets or visiting the homes, or, when the people come to the HCJB shop to get dry cells or make payments, an attempt is made by conversation and literature to draw them Christward.”³¹ Workers seized every pretext afforded by the Radio Circle’s receiver program for evangelism: “... as people come to make payments, buy batteries, maintenance, etc., we consider these contacts very important and *utilize every opportunity*

for witnessing...”³² (emphasis added) The material and cultural realms of HCJB’s activity clearly overlapped and reinforced each other. When visiting homes, workers drew direct ties in conversation to HCJB’s programs, questioning listeners’ program preferences in order to ascertain their stance concerning “their own need of salvation.”³³ In the station’s estimation, the Radio Circle department’s multi-pronged approach to evangelism produced results. “Many, many times,” Beougher wrote, “we have found people who have listened to the programs, having no other contact with the Gospel, are ready to accept Christ as they talk with us at the Radio Circle and in their homes.”³⁴ Added to the multiple exposure provided by audience capture, personal contact with station workers often proved the decisive turning point on listeners’ paths to evangelical conversion.

Accounts of the Radio Circle written by Mrs. Kermit Beougher for American readers document that personal contact with station workers crystallized an evangelical response from listeners, with ripple-like repercussions for local communities. In an October 1957 edition of *The Echo*, a station offprint, Mrs. Beougher described a typical visit by Radio Circle workers. Two young men from the Radio Circle installed a radio “in the home of a very humble woman” who worked “daily in the [Quito] plaza.” Though the woman had been attending an evangelical church, she was only a “sympathizer,” not a believer. While installing the receiver, one of the young men noticed the woman had images in her room. Questioning the woman, the worker asked his hostess whether, as a Catholic, she “still had confidence in her images.” According to Beougher, the “Holy Spirit was working in her heart and through this she came to an immediate decision and accepted Christ as her Savior.” That evening, her family followed suit. Then, according to the station account, the new convert turned publicly from her former Catholic ways. In

her family and neighbors' presence, "she began to destroy the images that had been so dear to her."³⁵

In the same edition, Mrs. Beougher described the experience of the wife of an Ecuadoran schoolteacher. Seriously injured in a bus accident, she listened constantly to a "small radio installed by the Radio Circle" during home recovery, where she became interested in the station's programs. In order to "to find out more information about the Gospel," she sent her husband to HCJB, along with her 12-year old daughter. There, Kermit Beougher and Manuel Espinosa, a Radio Circle worker, "opened the Word [of God] to him" and the father "readily accepted Christ as Saviour," as did his daughter. As evidence of their changed lives, according to the station, the father recounted "how changed their home as now that Christ had come in" and the daughter "witness[ed] to other members of the family."³⁶

A third account by Mrs. Beougher published in October 1957 recounted the experience of a different type of HCJB listener. A personal friend of a Radio Circle worker, the listener in the town of Inaquito possessed a college education and had studied for the Catholic priesthood before becoming disillusioned with Roman religion. His wife having listened to an earphone set provided by the Radio Circle when a young girl, the couple now owned a commercial set, which they tuned to HCJB. One day, the two invited "the Radio Circle boys" into their home. After [some] conversation, the husband and wife kneeled and "accepted Christ as their personal Saviour"; since then, they began regularly attending the evangelical church in Inaquito and expected to be baptized within the month.³⁷

Finally, an account written by Mrs. Beougher in November 1957 illustrated the effectiveness of the Radio Circle in regions of Ecuador more distant from HCJB. Kermit Beougher traveled to the mountain town of Ibarra with two young Ecuadoran men from the Radio Circle to place several receivers. On the return trip to Quito, they stopped in the town of Cayambe. While there, they visited home of previous set owners and installed a radio for a local female hot-dog vendor. Beougher reported seven conversions from his trip. These seven converts then began testifying to their neighbors about their recent experience.³⁸

While sketchy and admittedly selective, these published accounts reveal several elements which explain the effectiveness of the Radio Circle program. Conversion of listeners occurred only after prolonged exposure to HCJB's programs and broad familiarity with the station's evangelical identity. The capture of listeners through pretuning ensured a continued audience over an extended period of time, increasing the likely possibility of a personal transformation. As station accounts demonstrate, many of the Radio Circle's converts in heavily Catholic Ecuador were predictably practicing or lapsed Catholics. Prolonged exposure to HCJB familiarized followers of Rome with the claims of evangelicalism and served to overcome in-bred bias against the foreign religion from North America. Entry of radios into the home provided the Radio Circle with new types of evangelistic opportunities. In the case of the woman who prayed to images, servicing a set allowed station workers to enter the privacy of an Ecuadoran's home, where they could observe first-hand a listener's lifeworld and intimate spiritual practices. Whether in the home or on the station compound, personal contact with station personnel played a vital role in the conversion process, though solitary conversions undoubtedly

took place as well. Finally, the published accounts by the station indicate the “multiplier effects” of HCJB’s evangelistic efforts, since converts to evangelicalism immediately engaged in extensive proselytization themselves as a religious exercise, sharing the “good news” with family, friends, neighbors, and fellow villagers. Overall, the experiences of Radio Circle “subscribers” underscored the importance of continual contact with the station – initiated through interaction with station personnel, maintained through missionary capture, and cemented by personal visitation.

The Logic of Missionary Capture

HCJB officials considered regularized contact with subscribers as a highest priority. Clarence Jones emphasized the need for missionary broadcasters to form regular habits in listeners. The goal of missionary broadcasting, Jones wrote, was to turn the “indifferent listener” into an “interested listener, who returns again and again to his radio dial to “pick up” the missionary station.”³⁹ Beginning in 1949 under Marion Krekler, Radio Circle workers implemented Jones’s exhortation, turning to pretuned technology as the pre-eminent means to ensure regular listening audiences. Fixed tuned receivers created nearly optimal conditions for regularized contact, providing a captive audience which had literally “no where else to tune.”

Use of pretuned radios made a particular type of audience capture possible, that of regularized domestic listening, which became of fundamental importance to missionary broadcasters world-wide during the postwar period. Between 1949 and 1959, the number of sets produced by HCJB expanded significantly, particularly in the Greater Quito area. Coupled with the overall expansion of commercial sales of radios after WWII, radio

listening became a much more common part of everyday life for a significant number of Ecuadorans. A study of the media habits of radio listeners in Ecuador's eight largest cities, undertaken by the Voice of America in 1958, for example, found that 86% listened to radio daily.⁴⁰ Proliferation of broadcast stations and heightened competition accompanied the increased distribution of sets.

In response to the proliferation of radio listening in Ecuador, HCJB officials and workers began to increasingly prize the quotidian, or mundane, capabilities of radio technology. Rather than occasional audiences, HCJB sought regular daily listeners. And it was precisely regularized capture which pretuned sets made more feasible. In articulating a rationale for pretuned radios, HCJB officials cited "the guarantee of a daily, repeated impact of the gospel" as a leading factor.⁴¹ The Radio Circle universally adopted fixed tuning on all HCJB radios during the 1950s, beginning with crystal sets, because they "insured us that many would be listening to gospel programs day by day."⁴² By the mid-1960s, the height of the Radio Circle's pretuned program, the station proudly promoted that captive listeners heard the gospel message presented "FOURTEEN TIMES every day – 365 days a year."⁴³ By requiring that set owners return to the station frequently for batteries and repairs and to make time payments, the Radio Circle deftly transformed casual listeners into what it called "subscribers." The station made the goal of such actions crystal clear: 'Keep them coming back to us!' is our motto – designed to give us repeated opportunities to talk with them about the gospel."⁴⁴ Turning casual listeners into subscribers, then evangelical "sympathizers" (*sympaticios*), and finally converts became the stated objective behind the multiple stratagems involved in capture activity.

Why did repetition of the gospel by pretuning matter so highly to HCJB's Radio Circle? Answering the question involves appreciating how evangelical broadcasters such as Clarence Jones perceived their cultural mission. Jones considered that broadcasting involved proselytization rather than entertainment: "The radio missionary is trying to do more than reach the ears of his listeners; he must reach their hearts with the Gospel."⁴⁵ The broadcaster's over-riding objective was to win souls; in the Ecuadoran context, this meant largely converting them from Catholicism and its popular syncretistic variations. Cultural programming on radio served only to attract listeners; ultimately, missionary broadcasters had a clear propagandistic purpose. "The missionary who is broadcasting the Gospel message on a foreign field," Jones stated, "must ever be conscious of the fact that the "program belongs to the people", and must be given to them in a manner calculated to first please them and then instruct and convert them."⁴⁶ Broadcasters had to constantly juggle the lure of attractive programs with the didactic content of the Gospel message - what audiences they thought they wanted and what broadcasters knew they needed. Jones struggled with this dilemma between responsibilities of broadcasters to their audiences and to their religion, but made it clear where the allegiance of the missionary lay:

"How much can I give him them of what they want before I give them what they ought to have?" is one of the many perplexing questions confronting the program producer on a Gospel station on a foreign field. 'How much and what type of music?' 'How much of cultural and educational programs as 'bait' before the Gospel programs?' 'How can we make the listeners write in to us?' ... These and many other questions are continually arising and demanding a satisfactory answer, -- not just satisfactory to the present demands of a listening radio audience either, but "satisfactory" in the light of the eternal responsibilities as a soul winner which confront the radio missionary."⁴⁷

Broadcasters decided program content with assurance because of their interpretive authority, borne of their religious certitude. Given the difference between their own spiritual rebirth and the fallen spiritual condition of their “heathen” (unconverted) audiences, missionaries judged with confidence what listeners should hear, even if this required partially catering to listener tastes in order to elicit their attention in the first instance and even if this action in the end undermined listener’s freedom of choice.

The radio missionary’s cultural mandate and spiritual standing justified strategies of capture. For evangelicals, conversion required enlightenment. Since men and women’s minds had been darkened by sin, and since most of humanity lived in ignorance, understanding of the gospel required a significant educational undertaking. In addition, many American evangelicals during the postwar period made ethnocentric assumptions about the religious view of populations in the developing countries, believing that they lived shrouded in ignorance, superstition, and darkness. As a result, populations in the foreign mission field had to hear the gospel repeatedly in order to appreciate it. Radio aided the process of religious education significantly through constant repetition: “Radio repeats the message until it is understood.”⁴⁸ Jones made the connection between reiteration of the gospel message and radio explicit in 1945:

“Blinded by Satan and raised in darkness and superstition, many native minds cannot readily comprehend the message of a free salvation by His Grace. Sometimes only after hearing the Old, Old Story repeated many times does the individual or group begin to understand the truth as the Light dawns upon their darkened hearts. Radio allows the missionary to project the message of salvation into the homes of the listeners time and time again under the most favorable circumstances of attractive presentation and undivided attention.”⁴⁹

In 1948, Jones slightly modified his argument, underscoring its basic point:

“... Often only as the Old, Old Story is repeated many times, “line upon line and precept upon precept,” does the individual or group begin to understand the Truth, and the Light of the Lord enter in. Radio allows the missionary to project the many attractive programs he has to offer, leading up to the message of salvation, time and time again under usually favorable listening conditions. The drop of water falling on hardest stone can finally crack it.”⁵⁰

Radio appealed to evangelical missionaries because it combined reiterative power with privacy; radio offered the possibility of regular listening under ideal conditions in the home. By guaranteeing that listeners had nowhere else to tune, pretuned listener capture ensured the daily, domestic repetition of the gospel message. Through daily exposure to their religious message, HCJB officials expected to gradually overcome listener ignorance and resistance, until individuals eventually realized their sinfulness and accepted the claims of evangelicals for themselves.

A true account of a blacksmith in an unnamed Ecuadoran village, distributed by the Radio Circle, illustrated in idealized form what HCJB workers expected to obtain through radio capture. Having heard his neighbor's receiver, a village blacksmith expressed a desire for his own set. Radio Circle personnel visited his town and installed fifteen receivers, including one in the blacksmith's shop. One day, the blacksmith had a job he could not handle on his forge and decided to ask HCJB's engineers at the station's transmitter site in nearby Pifo for help. While there, the blacksmith underwent an evangelical transformation. In the station's account, the event had been a long time in coming:

“The Holy Spirit had been working in his heart as day by day he had listened to the Word of God on his little radio. It was at the door of the transmitter building that he bowed his head and committed his life to the Lord Jesus Christ.”

Capture thus paved the way for personal contact, which produced conversion. Following his changeover, the blacksmith opened his home to an HCJB Gospel Team, which held services there. As a result, six believers from the village underwent baptism.⁵¹ Thus, the pattern of regular listening made possible by HCJB's pretuned radios resulted directly in the evangelicalization of an entire village.

In addition to directly producing converts, officials believed that radio capture had another important, but more invisible, long-term effect on listening audiences – the reduction of prejudice. Here, radio's domestic environment proved as important as regularized listening. In order to effectively proselytize during the early postwar period, North American evangelicals needed to find ways to break down attitudinal barriers to their religion, which prevented a hearing of their message. By presenting the claims of the gospel on a regular basis within the privacy and security of the home, HCJB officials and workers believed overwhelmingly that radio helped break down opposition to conservative evangelical religion among their largely Catholic audience.

Station staff frequently singled out the reduction of prejudice against evangelicalism as HCJB's most significant accomplishment, made possible in large part through listener capture. A 1954 Radio Circle set inventory noted success along these lines: "95% prejudice broken down."⁵² In 1958, Mrs. Kermit Beougher identified changing Ecuadoran attitudes as a major purpose of Radio Circle's "receiver ministry," which literally opened doors for evangelism and house visits: "To break down prejudices. This is especially true after a set is installed. To make an opening for a visit by a national worker or missionary."⁵³ Mrs Beougher singled out the central role of the domestic environment in reducing prejudice towards HCJB. She considered the home as the Radio

Circle's principal target: "We cater to the home, not just a set to a village."⁵⁴ Listening at home removed evangelicalism, widely seen as a foreign religion in Catholic Ecuador, from the contentious public square. By placing pretuned receivers in individual homes rather than public places, Radio Circle workers shrewdly skirted overt opposition to their message, which could have been easily snuffed if publicly presented. "I think one radio in a public place in an average village," Mrs. Beougher opined, "would soon be silenced in Ecuador." Diffusing their highly controversial message in the 1950s to multiple, externally invisible, domestic hearing sites, where the gospel could be "heard but not seen," Radio Circle workers made it far more difficult for local adversaries to locate and contain their proselytizing. According greater exposure to evangelicalism in the process, HCJB laid groundwork for the long-term diffusion of conservative Protestant religion in Ecuador.

For Kermit Beougher, overcoming prejudice meant "opening new territories" to the gospel, since much of Ecuador remained closed to evangelicals prior to 1950. The highlands, or mountain, region of Ecuador had traditionally been the most difficult for North American evangelicals to penetrate. Beougher considered the region the "most fanatical areas [sic]" in Ecuador, which were "completely closed to the Gospel," due to the prevalence of Catholicism. Evangelical missionaries who had attempted to evangelize the region had been frequently stoned and told not to return. Despite their hostility to Protestant religion, Beougher believed that highlanders loved music, as well as contact with the outside world.⁵⁵ With the "bait" of news and cultural programs, pretuned radios allowed HCJB missionaries to attracting the interest of highlanders, exposing them

repeatedly to the evangelical message in a low-key manner without the danger of personal confrontation.

Beougher provided several examples of how placement of pretuned radio opened up new territories in Ecuador to American evangelicals. In one unnamed town, in which villagers had stoned a missionary, the Radio Circle returned to install ten receivers, departing as quickly as possible. The department then received requests from the pueblo for twenty more sets. When Radio Circle workers returned this time to install the new batch of receivers, Beougher recounted that they encountered “no sign of hostility.”

A second example recounted by Beougher demonstrated how Radio Circle workers believed pretuned radios could help evangelize an entire town previously hostile to the conservative evangelical gospel. According to Beougher, an unnamed town north of Quito had “never been open to the Gospel,” despite the efforts of an evangelical mission to establish a work. Nonetheless, the Radio Circle succeeded in placing a receiver in “the home of interested people.” When workers returned several months later to follow up on the installation, they found that the original family had become “open to the Gospel” and “readily accepted the Lord as their savior” (a characteristically evangelical confession). The Radio Circle then installed a set in the home of neighbors who subsequently became *evangelicos* the same day. Between the two families, seven people underwent evangelical conversion. The two families then requested a missionary. In the spring of 1958, an evangelical mission arrived, purchased land, and started holding services, at which 24 people attended by May 1958.⁵⁶ Thus, installation of pre-tuned sets led to the evangelization of a remote village and the establishment of an evangelical church.

Though the accounts of Beougher and other Radio Circle workers may seem exaggerated and self-serving, it is unlikely that they represent an outright fabrication. The pattern described by Beougher was probably not atypical. Rather, it likely corresponded in outline to a real and frequent sequence of evangelistic events set underway by the installation of pretuned receivers in mountainous villages: radio installation, family conversion, request for a missionary, Protestant services, permanent house church. While doubtless self-promoting, station accounts also bear the ring of truth, given the gradual evangelicalization of the Latin American continent underway by 1960.

Whatever degree such conceptions corresponded to the actual situation on the ground, publicized accounts of the Radio Circle illustrated how HCJB officials conceived of pretuned radios and represented their effectiveness. Station officials believed adamantly that pretuned radios (or “Mechanical Missionaries”) reduced resistance to the gospel message and opened doors for their flesh-and-blood equivalents, particularly in remote pueblos. Indeed, reducing prejudice against conservative evangelicals by Catholics became the major justification, or *raison d’etre*, for the Radio Circle department:

“We have seen God working miraculously in towns where in former years missionaries have been repeatedly stoned when they attempted to bring the Gospel message to that locality. But now workers arrive with a different approach. Instead of saying, “We are here to preach the gospel” (and then get stoned out), we say, “I have some very nice radios to distribute in this town at prices far less than cost. You can hear the station from Quito, the nation’s capital – 18 hours a day.” The story is different – *we have an entrance and are welcomed with this kind of approach. Rabid fanaticism is broken down, new attitudes are inculcated, the people begin to listen, the Spirit of God works, listeners first become “simpatizantes” (sympathizers with the gospel), then they become definite born-again believers.*”⁵⁷ (emphasis added)

Appealing to the near universal thirst for news and entertainment and the contagious desire to own a radio, HCJB officials found a way to penetrate even the most obdurate pueblos:

*“We have had the joy of seeing entire areas opened to the Gospel where previously missionaries had not been able to work. This has come about through the request for radios. One or two have been installed in homes. Then, in a later visit, a few more are installed. Barriers are broken down and an entrance made for missionaries and national pastors to continue the work with the people of these particular areas.”*⁵⁸ (italics added)

Once installed, HCJB officials believed the daily repetition of gospel programs worked to reduce prejudice and doubt about the gospel message:

*“As people listened to their radios, they became more and more interested in its message. Several wrote to the Bible Institute of the Air for Bible Courses... and for New Testaments. Hungry, prejudiced and doubtful hearts were reached. And all because of pretuned gospel radios!”*⁵⁹ (italics added)

Station accounts thus attest vociferously to the faith of HCJB officials and Radio Circle workers in the ability of station broadcasts, coupled with pretuned reception, to facilitate the spread of evangelical religion.

Pretuned technology thus made possible not only the repetition of the evangelical message in time, but its extension across space as well. HCJB officials and Radio Circle workers highly prized the manner in which pretuned radios established a spatial presence, increasing the continual circulation of the evangelical message in isolated parts of Ecuador. The ability of radio waves to conquer the natural barriers of mountains and jungle had an important corollary, ending not merely geographic isolation but cultural and spiritual separation as well. Unlike their flesh-and-blood equivalents, “Mechanical Missionaries” provided a “permanent gospel witness,” particularly valued in numerous parts of the country which lacked a Protestant missionary or pastor. Whereas a “live”

missionary might only visit inaccessible sites on rare occasions, fixed tuned radios could “teach and preach day and night.”⁶⁰ This permanent presence allowed missionary broadcasters and their allied agencies to not merely proselytize, but to disciple converts, “establishing new Christians in the faith.”

By reducing rural isolation, “Mechanical Missionaries” contributed to the formation of new forms of virtual religious communities in the mission field. In addition to establishing evangelical churches through conversions, pretuned radios helped to maintain churches through ongoing training and “discipleship,” reducing the dangers of spiritual remoteness through inclusion in an electronically-shared communion of the saints. Pretuned sets enabled often isolated new converts to continue in their faith by maintaining contact with outside evangelical believers. Kermit Beougher cited the case of El Chaco as typical of new religious communities made possible by pretuned missionary radio. A mountain pueblo 2 ½ days from Quito by car, horseback, and on foot, the village lacked electricity and lighting. A village member happened to purchase a Bible, as a result of which several others “were saved.” Since the village lacked a Protestant missionary, a group of villagers traveled to HCJB to request a missionary and a radio. The Radio Circle installed a battery-operated set and built a “hydraulic battery charger.” By 1958, the remote mountain village of El Chaco had over 25 evangelical believers. Beougher stressed the typicality of El Chaco: “There are other isolated villages such as this in different parts of Ecuador where there are one or two believers who have received sets from us, who depend on HCJB for their spiritual fellowship.”⁶¹ Evangelical communities in Ecuador were thus not only established, but sustained by pretuned radios.

The experience of A.C. Snead with CMA missionaries in West Africa demonstrated how mission organizations on different continents envisioned using pretuned radios for similar purposes as a mechanical substitute for live missionaries and an instrument to build religious communities. Snead envisioned setting up receivers in central meeting points where local Christians would gather every day for worship services, singing, scripture reading, and teaching – all via pretuned reception. In requesting information on “simple fixed tuning sets,” Snead stressed how daily liturgical contact through permanently stationed radios made it possible to disciple new Christians – “babes in Christ.” A narrowly technical device, pretuned radios earned their personified epithet “Mechanical Missionaries” because they stood ever vigilant, protecting the purity of the faith against infiltration and corruption. “Mechanical Missionaries” functioned as far more than mere substitutes for absent missionaries; they actively guarded and extended missionary presence, defending and building up the saints.

Conclusion

During the decade and a half following WWII, as missionary radio underwent its first wave of global expansion, missionary broadcasters made an important discovery – radio could not function as a mass medium without mass receivers. Stated in the positive by Clarence Jones, mass receivers made mass broadcasting of the gospel possible: “Where there are radio receivers already in use, and where large quantities of small cheap receivers can be successfully introduced, missionary radio permits untold thousands to be reached in their homes or villages who might not otherwise be touched for Christ or only infrequently.”⁶² Anticipating the postwar growth of missionary radio, from 1944 to 1945,

Jones had prepared for this period of growth by articulating a clear vision of a missionary radio for the masses, which he widely promoted in evangelical missionary broadcasting circles while implementing direct plans to produce a receiver at HCJB.

Ironically, Jones's own involvement in HCJB's expansion largely precluded him from bringing the vision of a mass missionary radio to final fruition. Instead, this task fell to far less known technicians and staff workers who scrambled to resurrect HCJB's receiver department from the ash heap in 1949, using their own funds to initially construct modest crystal headphone sets from package crating. Under the direction of Marion Krekler and later Kermit Beougher, however, the Radio Circle within a decade had grown to become a far larger and more vibrant program than it had under Jones, distributing hundreds of radios of various kinds to homes across Ecuador and fulfilling the spirit of Jones's original intent for the station's receiver department to spearhead the evangelization of Ecuador.

The experience of the Radio Circle from 1949 to 1959 under Marion Krekler demonstrated that the development of missionary radio reception did not follow a simple or predictable pattern in Ecuador. To understand the complexity and heterogeneity of HCJB's receiver program, close empirical scrutiny and historical study is needed. Though Jones originally founded the department in 1935, the Radio Circle acquired its own independent institutional identity and facilities for the first time in 1950. Under the direction of Marion Krekler, the receiver department forged new directions that responded to the changing postwar broadcasting environment. No single paradigm emerged in HCJB's reinvigorated Radio Circle. Instead, by 1959, HCJB developed a panoply of technical responses to missionary radio reception, including a range of types

(crystal, battery, electric, and loudspeaker) and a variety of models, depending on the listener's locale and setting. Radio Circle workers did not attempt to impose a single homogenous solution on their varied audiences, but instead adapted receiver responses in a flexible and pragmatic manner to match available resources and fit the local needs of listeners, often in an ad hoc fashion. Contravening Jones's original stipulation which forbade the usage of receiver headphones, Krekler revived the Radio Circle by distributing hundreds of crystal earphones sets to listeners because of their cheap cost. The majority of the department's subscribers in the greater Quito area picked up the station on longwave, using AC/DC receivers, while more remote listeners relied on battery-powered sets.

Despite its diversity, several common threads united Radio Circle's heterogeneous outlets, setting the mold for postwar missionary reception. First, the goal of the Radio Circle was to build audiences of regular listeners who tuned daily to the station; HCJB desired "captive" audiences. Second, confronted with an increasing competition for listeners in Ecuador, the Radio Circle forged strategies to capture its audiences that relied on the technical features of radio, notably the use of fixed tuning reception. Despite their variety of designs and power sources, every single radio produced and distributed by HCJB from 1949 to 1959 included pretuning, clearly demonstrating the overriding importance which station officials and workers attached to this feature. Third, for HCJB, the distribution of radios formed merely part of a larger social relationship between broadcasters and subscribers, which extended beyond mere radio listening. As Jones stated, officials were interested in obtaining listeners' hearts more than their ears. To do so, Radio Circle workers developed an extensive set of interactions with set owners

defined around the installation and maintenance of receivers and designed intentionally to increase the exposure of listeners to the gospel in multiple forms and on multiple occasions.

The multiple-media approach of radio evangelism in the local mission field cut across hard-and-fast distinctions between separate communication forms. Missionary reception involved a holistic effort; workers provided oral testimony, interviewed listeners, and supplemented gospel programs with extensive printed literature. Gospel broadcasting via the Radio Circle in the process affirmed, rather than negated, the historical distinctives of evangelical religion, namely its appeal to the authority of written revelation (Scripture), the role of individual (as opposed to sacerdotal) interpretation, and the requirements of personal conversion and witness.

The process of listener capture as refined by the Radio Circle from 1949 to 1959 was thus not purely cultural or technical, but a pre-eminently social one as well. Overall, the goal of listener capture was to reduce animosity toward evangelicalism and open the door for direct proselytizing, which had been extremely difficult for evangelicals in many parts of Ecuador before 1950. The logic of missionary capture maintained that, over time, consistent exposure to HCJB's programs and constant repetition of the gospel message would normalize the discursive content of the evangelical appeal, reduce resistance, improve listener understanding, and result in a significantly higher numbers of conversions. According to the rationale of evangelicals, familiarity would breed not contempt, but broader legitimacy.

The solution to mass reception forged by the Radio Circle from 1949 to 1959 transformed radio listening into a highly localized activity, as Eric Williams had correctly

anticipated in 1933. Jones rightly argued in 1944 that lower-cost long-wave receivers offered the only economically viable “mass missionary receiver” for the lower classes. The need to mass produce long-wave receivers, in turn, required missionary broadcasters to invest in local, longwave transmission, as opposed to shortwave, long-distance broadcasting. In his Latin American Survey, his global radio project, and his radio summer courses, Jones encouraged evangelical missionaries to establish “radio centers” operating on long-wave in every major city around the world. The experience of the Radio Circle demonstrated that local reception facilitated the development of missionary broadcasting as a social relationship. Regular contacts between station workers and listeners through the installation, maintenance, and servicing of sets supplemented the electronic communication of the gospel and augmented opportunities for proselytizing considerably. In regions geographically removed from the station and therefore reached via higher frequencies, missionary stations had to rely far more often on intermediaries to distribute and maintain receivers. As a result, mission agency and national church workers, rather than HCJB staff, acted as the station’s interface and came into direct personal contact with listeners.

On another level, the experience of Clarence Jones and HCJB during the early postwar period revealed a deep-seated, rarely conscious, tension over the role of commercialism in missionary broadcasting. Jones clearly distinguished in theory between the commercial ethos and the spiritual conduct of missionary broadcasting. In 1945, as part of his proposal to produce mass missionary radios, Jones stressed the need for a non-commercial organization to oversee the development, production, and distribution of mass missionary receivers on behalf of evangelical missionaries. In Jones’s estimation,

such an organization had to operate on “strict ethical and moral lines” and avoid “disintegrating eventually to merely a commercial basis.”⁶³ The success and integrity of the operation would rest in part on keeping it “spiritual” and not “just developed on a commercial plane.” In his “Guide to Missionary Broadcasting” (1947), Jones made a further distinction between commercial financing and day-to-day commercial operations, arguing that a missionary radio station should not accept commercial funds or commercial programming because they would interfere with the station’s religious mission.⁶⁴

The line between the “commercial” and “spiritual” ethos of missionary broadcasting, however, proved extremely hard to draw in practice. Jones insisted that missionary radio stations should emulate best commercial principles and practices in order to operate efficiently:

“...from an organizational standpoint the best ideas and practices of a commercial radio station should be enlisted and preserved. In other words, the successful operation of a Gospel station on the foreign field calls for much of the system and efficiency one expects to find in a business enterprise. For this reason the station director or manager should be a missionary with as wide an executive or office management experience as possible.”⁶⁵

HCJB’s experience demonstrated the difficulty of distinguishing between the spirit of commercial radio and its practical operations, which required considerable hair-splitting over the precise meaning of commercialism and sponsorship. Despite statements by Jones to the contrary, HCJB depended on commercial funding by Ecuadoran businesses during its lean years in the 1930s (though it did not allow direct advertising). Beginning in 1941, programs “sponsored” by American evangelical preachers and program producers, such

as Charles Fuller, Walter Maier, and later Billy Graham, formed a mainstay for HCJB, comprising half of its revenue.

From its outset, international evangelical religious broadcasting was indelibly tied to the principles of private ownership and commercial operation. Jones equated radio with commercial broadcasting in the United States without considering alternative non-commercial models or publicly funded approaches to broadcasting. HCJB's directors and officers sought to run HCJB as a commercial station, using funds from the American evangelical community to provide it with sufficient independence to broadcast an alternative, non-commercial message. Yet reliance on American evangelicals failed to deliver HCJB's managers from the spirit of commercialism (particularly a concern with marketing and operating efficiency) and made officials as dependent on American evangelical donors as commercial stations in the United States were on advertising revenue, with equally significant consequences.

HCJB's officers welcomed the implementation of commercial values in certain areas. In the sphere of radio reception, HCJB officials made the benchmark decision in 1950 to sell rather than lend the station's radios to listeners at subsidized prices. Radios provided by the Radio Circle under Clarence Jones during the pre-war period, as well as Krekler's "mousetrap sets," had been provided free of charge to select Ecuadoran families, subject to strict conditions of usage. Station officials rationalized the decision to now charge owners, arguing that it would encourage purchasers to take greater participation in radio ownership and hence in set maintenance. Fixed tuning freed managers from fears of the perverse effects of the marketplace. Since sets came pretuned, officials did not worry excessively that set owners would abuse radios once they owned

them by listening to the wrong programs and stations. Over the long haul, however, HCJB's decision had significant implications, directly introducing the principle of the market into the paternalistic relationship between the station and its audiences, a relationship which Radio Circle workers reinforced during the 1950s through its extensive installation and "follow-up" program. Once the station offered listeners sets without pretuning, a clear conflict between the station's religious agenda and individual listener interests would develop.

Looking back, the period 1949 to 1959 in Latin America presented both setback and promise in the field of missionary radio reception. Despite Clarence Jones's exhortation of a clear vision of a radio for the masses in 1944-45 and despite the considerable expansion of American evangelical radio stations and facilities which ensued around the world, a mass missionary receiver did not materialize in the decade and a half following WWII. HCJB succeeded in patching together an effective local solution to the problem of low-cost receivers, which relied on the provision of local long-wave service and on the availability of electrical mains. The Radio Circle pushed the distribution of sets employing vacuum tube technology to its geographic and technical limits. The notion of expanding missionary radio into the remote hinterlands awaited a low-cost, portable alternative to the question of missionary reception.

A 1950 column in *Call of the Andes* summarized the state of the "receiver problem" on the eve of the "transistor revolution." Citing David Sarnoff's recent proposal that the Voice of America build two-dollar radios for distribution in Europe and Russia, the author ceded that "[t]he 'other half' of the missionary broadcast job still remains to be accomplished in the supplying of *low-cost, efficient, easily-serviced, fool-proof, simply*

operated radio receivers in *vast quantities* to listeners in the foreign field”⁶⁶ (emphasis in original). While HCJB’s receiver program, the Radio Circle, had established the model for mass missionary radio reception from 1931 to 1959, the station did not possess the technical or economic means to translate this vision into a full-fledged, world-wide reality. On a global scale, the “receiver problem,” as defined by evangelical missionary engineers and broadcasters, remained one of the most intractable impediments to the propagation of the evangelical radio message worldwide. The solution to the problem would await the development of breakthroughs in technology and advances in the commercial market barely on the horizon in 1958.

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- ¹ Anonymous, "Radio Circle Story," 1962, File 396 ("Radio Circle Ministry"), HCJB Archives (HCJB), Colorado Springs, CO.
- ² World Radio Missionary Fellowship, *Catch The Vision: The Story of HCJB – The Voice of the Andes* (World Radio Missionary Fellowship, 1989), Chapter 5; "Information Sheet for All WRMF Workers: Radio Circle," File 396, HCJB; letter from Henry Hungerpillar to H.M. Voss, Folder 17, Box 33, Collection 86 (International Christian Broadcasters - Records), Billy Graham Center Archives (BGCA), Wheaton, IL.
- ³ Anonymous, "Baited with the Gospel," *Call of the Andes*, Vol. 7, No. 3, September 1950, HCJB, 13.
- ⁴ Letter from Henry Hungerpillar to H.M. Voss, Folder 17, Box 33, Collection 86, BGCA.
- ⁵ World Radio Missionary Fellowship, *Catch The Vision: The Story of HCJB – The Voice of the Andes* (World Radio Missionary Fellowship, 1989), chapter 5.
- ⁶ This figure includes some duplication, since some sets were relocated from one own location to another. At the same time, the figure dramatically under-represents the number of total listeners, since sets often served more than one family, as well as multiple members of the same family. Source: "Radio Circle Story," 1962, File 396, HCJB.
- ⁷ Untitled document, Radio Circle set inventory, undated (ca. September 1954), File 396, HCJB.
- ⁸ Letter from Mrs. Kermit Beougher to Rev. A.G. Thiessen, May 13, 1958, Folder 34, Box 32, Collection 86, BGCA.
- ⁹ Untitled document, Radio Circle set inventory, undated (ca. September 1954), File 396, HCJB.
- ¹⁰ Letter from Kermit Beougher to Abe Thiessen, May 19, 1958, Folder 34, Box 32, Collection 86, BGCA.
- ¹¹ Anonymous, "Radio Circle Story," 1962, Collection 396, HCJB.
- Anonymous, "Radio Circle Story," 1962, File 396, HCJB.
- ¹² Untitled document, Radio Circle set inventory, undated (ca. September 1954), File 396, HCJB.
- ¹³ Untitled document, Radio Circle set inventory, undated (ca. September 1954), File 396, HCJB.
- ¹⁴ "Information Sheet for All WRMF Workers: Radio Circle," File 396, HCJB.
- ¹⁵ "Information Sheet for All WRMF Workers: Radio Circle," File 396, HCJB.
- ¹⁶ Anonymous, "Radio Circle Story," 1962, File 396, HCJB.
- ¹⁷ "Ecuador" [publicity facts], File 396, HCJB.
- ¹⁸ World Radio Missionary Fellowship, *Catch The Vision: The Story of HCJB – The Voice of the Andes* (World Radio Missionary Fellowship, 1989), chapter 5.
- ¹⁹ World Radio Missionary Fellowship, *Catch The Vision: The Story of HCJB – The Voice of the Andes* (World Radio Missionary Fellowship, 1989), chapter 5.
- ²⁰ Frank Cook, *Seeds in the Wind: The Story of the Voice of the Andes, Radio Station HCJB, Quito, Ecuador* (World Radio Missionary Fellowship, 1961), 91.
- ²¹ Letter from Mrs. Kermit Beougher to Rev. A.G. Thiessen, May 13, 1958, Folder 34, Box 32, Collection 86, BGCA.
- ²² Letter from Mrs. Kermit Beougher to Rev. A.G. Thiessen, May 13, 1958, Folder 34, Box 32, Collection 86, BGCA.
- ²³ Letter from Mrs. Kermit Beougher to Rev. A.G. Thiessen, May 13, 1958, Folder 34, Box 32, Collection 86, BGCA.
- ²⁴ Letter from Kermit Beougher to Abe Thiessen, May 19, 1958, Folder 34, Box 32, Collection 86, BGCA.
- ²⁵ Letter from Kermit Beougher to Abe Thiessen, May 19, 1958, Folder 34, Box 32, Collection 86, BGCA.
- ²⁶ Anonymous, "Why Pre-Tuned Radios?," undated, File 396, HCJB.
- ²⁷ Letter from Kermit Beougher to Abe Thiessen, May 19, 1958, Folder 34, Box 32, Collection 86, BGCA.
- ²⁸ Frank Cook, *Seeds in the Wind: The Story of the Voice of the Andes, Radio Station HCJB, Quito, Ecuador* (World Radio Missionary Fellowship, 1961).
- ²⁹ World Radio Missionary Fellowship, *Catch The Vision: The Story of HCJB – The Voice of the Andes* (World Radio Missionary Fellowship, 1989), chapter 5.
- ³⁰ Anonymous, "Why Pre-Tuned Radios?," undated, File 396, HCJB.
- ³¹ "Information Sheet for All WRMF Workers: Radio Circle," File 396, HCJB.
- ³² Letter from Kermit Beougher to Abe Thiessen, May 19, 1958, Folder 34, Box 32, Collection 86, BGCA.
- ³³ Letter from Kermit Beougher to Abe Thiessen, May 19, 1958, Folder 34, Box 32, Collection 86, BGCA.

- ³⁴ Letter from Kermit Beougher to Abe Thiessen, May 19, 1958, Folder 34, Box 32, Collection 86, BGCA.
- ³⁵ Mrs. Kermit Beougher, "Harvest for Heaven – 1957 – Radio Circle" World Radio Missionary Fellowship, *The Echo*, Vol. III, No. 10, October 1, 1957, HCJB, 4.
- ³⁶ Mrs. Kermit Beougher, "Harvest for Heaven – 1957 – Radio Circle" World Radio Missionary Fellowship, *The Echo*, Vol. III, No. 10, October 1, 1957, HCJB, 4.
- ³⁷ Mrs. Kermit Beougher, "Harvest for Heaven – 1957 – Radio Circle" World Radio Missionary Fellowship, *The Echo*, Vol. III, No. 10, October 1, 1957, HCJB, 4.
- ³⁸ Mrs. Kermit Beougher, "Praise from Radio Circle," World Radio Missionary Fellowship, *The Echo*, Vol. I, No. 3, November 1, 1957, HCJB, 6.
- ³⁹ Clarence W. Jones, "Guide to Missionary Broadcasting," undated (ca. early 1948), File 419 ("C.W. Jones Writings"), HCJB.
- ⁴⁰ United States Information Agency, "Ecuador Media Habits, February – April 1958," Office of Research, Country Project Files, 1951-64, Box 25, RG 306 (United States Information Agency), National Archives, College Park, MD.
- ⁴¹ Anonymous, "Why Pre-Tuned Radios?," undated, File 396, HCJB.
- ⁴² Anonymous, "Radio Circle Story," 1962, File 396, HCJB.
- ⁴³ Anonymous, "Why Pre-Tuned Radios?," undated, File 396, HCJB.
- ⁴⁴ Anonymous, "Why Pre-Tuned Radios?," undated, File 396, HCJB.
- ⁴⁵ Clarence W. Jones, "Guide to Missionary Broadcasting," undated (ca. early 1948), File 419, HCJB, 7.
- ⁴⁶ Clarence W. Jones, "Guide to Missionary Broadcasting," undated (ca. early 1948), File 419, HCJB, 25.
- ⁴⁷ Clarence W. Jones, "Guide to Missionary Broadcasting," undated (ca. early 1948), File 419, HCJB, 7-8.
- ⁴⁸ Clarence W. Jones, "A Global Planning Project for Missionary Radio Stations," undated (ca. November 1945), Folder 165, Box 1, Collection 349 (Clarence Wesley Jones - Papers), BGCA.
- ⁴⁹ Clarence W. Jones, "A Global Planning Project for Missionary Radio Stations," undated (ca. November 1945), Folder 165, Box 1, Collection 349, BGCA.
- ⁵⁰ Clarence W. Jones, "A Global Planning Project for Missionary Radio Stations," undated (ca. November 1945), Folder 165, Box 1, Collection 349, BGCA.
- ⁵¹ Anonymous, "Radio Circle Story," 1962, File 396, HCJB and anonymous, "The Volume Was Turned Up High," File 342 ("History Paper Update after 1960"), HCJB.
- ⁵² Untitled document, Radio Circle set inventory, undated (ca. September 1954), File 396, HCJB.
- ⁵³ Letter from Mrs. Kermit Beougher to Rev. A.G. Thiessen, May 13, 1958, Folder 34, Box 32, Collection 86, BGCA.
- ⁵⁴ Letter from Mrs. Kermit Beougher to Rev. A.G. Thiessen, May 13, 1958, Folder 34, Box 32, Collection 86, BGCA.
- ⁵⁵ Letter from Kermit Beougher to Abe Thiessen, May 19, 1958, Folder 34, Box 32, Collection 86, BGCA.
- ⁵⁶ Letter from Kermit Beougher to Abe Thiessen, May 19, 1958, Folder 34, Box 32, Collection 86, BGCA.
- ⁵⁷ Anonymous, "Why Pre-Tuned Radios?," undated, File 396, HCJB.
- ⁵⁸ Anonymous, "Radio Circle Story," 1962, File 396, HCJB.
- ⁵⁹ Anonymous, "Radio Circle Story," 1962, File 396, HCJB.
- ⁶⁰ Letter from Mrs. Kermit Beougher to Rev. A.G. Thiessen, May 13, 1958, Folder 34, Box 32, Collection 86, BGCA.
- ⁶¹ Letter from Kermit Beougher to Abe Thiessen, May 19, 1958, Folder 34, Box 32, Collection 86, BGCA.
- ⁶² Clarence Jones, "Station Groundwork," Report of the World Conference on Missionary Radio, June 16-19, 1955, Folder 1, Box 35, Collection 86, and "A Global Planning Project for Missionary Radio Stations," undated (ca. November 1945), Folder 165, Box 1, Collection 349, BGCA.
- ⁶³ Clarence Jones, et al, "Outline of a Project To Provide Small and Low-Priced Radio Receiving Sets to the Underprivileged Masses of Latin America and Elsewhere", undated (likely November 1944), attached to letter from Clarence Jones to Reuben Larson, November 11, 1944, File 364 ("Correspondence CWJ and R.E. Larson 1944"), HCJB.
- ⁶⁴ Clarence W. Jones, "Guide to Missionary Broadcasting," undated (ca. early 1948), File 419, HCJB, 24.
- ⁶⁵ Clarence W. Jones, "Guide to Missionary Broadcasting," undated (ca. early 1948), File 419, HCJB, 23.
- ⁶⁶ Anonymous, *Call of the Andes*, Vol 7, No 3, Sept, 1950, HCJB, 6.

Part II

Station ELWA and the Missionary Transistor Receiver Project (1954-70)

The second half of the dissertation represents a shift in time period as well as geographic focus. Chapters 6 and 9, which serve as bookends, narrate the history of Station ELWA, the first missionary station in Africa, and its Portable Missionary Receiver department during two strikingly different periods: from the station's founding in 1954 through the adoption of a large-scale transistor radio program in 1959; and from 1960 to 1970, when the station formally ended its receiver program. In between these bookends are two chapters devoted to telling in detail the important (and untold) story of the conservative evangelical project to custom build a radio receiver for the mission field employing new transistor technology. This narrative is divided into two chapters. The first chapter charts the development of the project from its origins in 1954 through the historic Missionary Transistor Research Meeting in 1956, a critical turning point for the project. Chapter 8 then completes the story of production efforts undertaken between 1956 and 1959.

The four chapters included in this second half of the dissertation form a single coherent unit. In thematic terms, the narratives of ELWA and the missionary transistor receiver collectively illustrate the dramatic “turn to technology” as a form of radio capture among the users of missionary radio following the invention of the transistor. The histories of ELWA and the transistor receiver project are themselves inextricably linked, since they were initiated by the same individual, took place during the exact same time

period, and involved the same actors and geographic regions. ELWA served as the field site for testing prototypes of the new receiver, as well as the primary market for its first production run. Finally, the commercial experience of ELWA in the 1960s provides an important postscript to the missionary transistor receiver project.

Chapter 6

ELWA's Portable Missionary Receiver Program, 1954-59

Introduction

This chapter narrates the origins of missionary radio Station ELWA, a story almost completely absent from existing scholarship, placing it within the broader context of the postwar resurgence of conservative evangelical missions centered in the Midwest at Wheaton College and Chicago's Moody Bible Institute. The first religious radio station on the African continent, Station ELWA in Monrovia, Liberia was constructed in 1954 by a team of Wheaton graduates. As its primary focus, the chapter addresses the ELWA's Portable Missionary Receiver (PMR) department over the first five years of the program's history. Faced with a complete lack of receivers in Liberia upon arrival, ELWA officials promptly set about organizing a project to disseminate radios in the country. Over the next half decade, managers of the PMR department put in place a small, but significant set distribution program in Liberia that revealed a great deal about missionary intention and social innovation in the field of radio capture.

The early history of ELWA's PMR program documents how conservative evangelical American broadcasters responded opportunistically to the practical challenges and logistical difficulties of radio reception in a tropical environment before the arrival of the transistor. As such, it sets a crucial baseline for the two chapters to follow, which describe in detail the development by missionary engineers of a customized transistor receiver expressly for use solely in the harsh and unique conditions of the mission field. Managers in ELWA's PMR department attempted not only to build

audiences, but to control what programs listeners tuned in and how they operated their sets (“radio capture”). Officials developed a series of creative social, legal, and institutional solutions to the problem of receiver shortage in Liberia, constructing a regime of “social regulation,” centered on the strict rationing of sets and training in radio usage. Managers capitalized on a phenomenon in Liberian villages which the dissertation describes as “radio ritualism,” parlaying the scarcity of radios in certain parts of their host country into a missionary asset to enhance the status of the station’s programs.

As this chapter demonstrates, missionary radio capture in the pre-transistor era was difficult business. By exploring how broadcasters regulated set usage in three areas – set distribution (or placement), battery maintenance, and station selection (or pretuning) – the chapter shows empirically both the resourcefulness of ELWA managers and the significant practical constraints they faced in their efforts to build radio audiences in the Liberian context. Constructing listeners and shaping listener habits through social convention in a vacuum-tube, battery-draining radio environment proved a challenging program. The difficulties which missionary broadcasters in Liberia encountered between 1954 and 1959 played a crucial role in defining the future development of a missionary transistor radio. They opened the door to the use of pretuning by ELWA and led directly to the commercialization of the station’s receiver program after 1960.

Launching Station ELWA, 1954-56

The launch of Station ELWA in Liberia, West Africa capped the world-wide expansion of radio facilities by conservative evangelical forces during the decade following WWII, discussed earlier in chapter 4. ELWA was founded by two undergraduate students at Wheaton College, a Midwestern center of American conservative evangelical activity in the early postwar period. By 1930, Wheaton, Illinois had become the “intellectual and political center of the Fundamentalist world.”¹ Named after the town where it was located just west of Chicago, Wheaton College had been saved from theological drift during the modernist controversy by its leaders’ close association with “Dwight L. Moody and his network” in nearby Chicago.² During the 1930s, Wheaton became the “leading fundamentalist college and the principal place where visions of evangelical glory were revived for a younger generation.”³ Known as the “Harvard of the Bible Belt,” Wheaton distinguished itself from other fundamentalist Bible institutes and colleges, by its emphasis on a broad liberal arts curriculum and its long history as a small Midwestern college, dating back to 1860.

In addition to its fundamentalist orthodoxy, evangelistic fervor, and academic credentials, Wheaton developed a strong reputation by 1940 for zeal in missions, thanks in part to the influence of V. Raymond Edman. A Christian & Missionary Alliance missionary who had served briefly alongside Reuben Larson and Stuart Clark in Ecuador in the 1920s, Edman returned from the mission field in 1926 in Ecuador after contracting smallpox, determined to advance the cause of missions from the homefront through education. In 1940, Edman took over as Wheaton’s President. Under his leadership, the college became a hive of evangelistic activity and a nerve center of conservative

evangelical missionary involvement, which Edman actively promoted from the college pulpit and through student mentoring.⁴ After 1940, Wheaton produced future leaders of the new neo-evangelical movement, such as Billy Graham, and important postwar missionary figures, including Dave Howard (later the general director of the World Evangelical Fellowship) his sister Elizabeth Howard, and her husband Jim Elliott (a highly celebrated missionary martyr killed by Auca Indians in the Ecuadoran jungle in 1954). Fueled by the missionary enthusiasm of a wave of WWII veterans who entered Wheaton under the G.I. Bill, nearly one-quarter of the members of the class of 1950 took their place in the mission field.⁵

Inspired by the rhetoric of President Edman, two missionary candidates at Wheaton conceived of broadcasting to Africa. The “vision of radio for Africa” initiated with William Watkins, the child of missionary parents who was born and raised in West Africa. Watkins shared the idea with Abe Thiessen, a former G.I. at Wheaton who was preparing for missionary work in Africa. Watkins and Thiessen viewed the daunting task of evangelizing the multitudes of the “Dark Continent” with a deep sense of urgency. Faced with a shortage of conservative Protestant missionaries in the field and the approaching end of the opportunity afforded by colonial rule, the two young men turned to radio as an immanent solution to the “problem of reaching so many with so little in so short a time.” When approached by the students to sponsor their project, various conservative Protestant mission boards refused, questioning the viability of broadcasting in postwar Africa, given the continent’s lack of reception facilities. As a result, Watkins and Thiessen demonstrated typical evangelical initiative and independence, forming their

own mission, which they named the West Africa Broadcasting Company (WABC) in April 1950, with Thiessen as President.⁶

Wheaton College proved a critical locale for the new organization. In addition to Dr. Edman, two other influential conservative evangelical missionary figures provided critical guidance and support for the youthful, inexperienced organizers of WABC: Reuben Larson, HCJB's home director based in Wheaton, and Dr. Albert Helser, future General Director of the Sudan Interior Mission (SIM) on furlough in the college town during the two students' college tenure.

Wheaton proved a meeting ground for other fortuitous and critical encounters of a different kind. After researching possible station sites, Watkins and Thiessen recognized that an "independent Missionary Radio Station" on the continent of Africa would only be politically feasible in one country: Liberia, the former American slave colony and the only one of [two] politically independent countries in Africa in 1950. Watkins and Thiessen then discovered that Norma Bloomquist, Liberia's Director of the Department of Literacy and a personal friend of William V.S. Tubman (the country's President since 1943), was in the college town during a three-month stay. Watkins and Thiessen boldly approach Bloomquist, requesting a broadcasting permit for their missionary association. Bloomquist in turn brought the matter to the attention of President Tubman.

Though they could not have known it, the timing of the young Americans' request proved propitious. Members of the ruling Americo-Liberian True Whig Party, the country's elite in power since 1870, had an interest in establishing radio facilities in the country as a tool of political unification, extending the influence of the central government from the capital Monrovia into the country's interior, where tribal groups

dominated.⁷ The government had attempted in 1950 to establish a broadcasting programme in order to promote “national coherence and unity” but government efforts had floundered.⁸ The Liberian government received the ambitious offer from the idealistic Wheaton students favorably. In February 1951, officials granted Watkins and Thiessen a broadcast franchise under the call letters ELWA.⁹

With a broadcast franchise in hand, the two Wheaton graduates possessed considerably greater credibility and leverage in their search for an institutional sponsor. Procurement of a license was followed by location of a mission agency to oversee their project. Following months of negotiation, Watkins and Thiessen agreed in November, 1952 to merge their voluntary association with Sudan Interior Mission (SIM), a major “faith-based” North American mission society, first mentioned in chapter 2. Founded in 1893 with home offices in New York City and Toronto and with 90 mission stations and nearly 500 missionaries in Africa by 1948, SIM made up the largest mission agency in Africa and one of the largest mission agencies in the world.¹⁰ SIM officials sought a radio broadcasting operation to supplement their extensive print literature ministries in densely populated Nigeria, the hub of their operations and site of their West African headquarters, as well as to more broadly reach audiences in North, Central, and East Africa.

SIM executives had been seeking to establish a broadcasting presence (or “Voice of Africa”) as early as 1944. In June 1944, C. Gordon Beacham and Guy Playfair had conducted extensive negotiations with Clarence Jones of World Radio Missionary Fellowship (WRMF) with the goal of establishing a collaborative radio venture between SIM and WRMF, HCJB’s parent organization. The seriousness of Beacham and Playfair’s intentions to set up an African broadcast voice impressed Jones: “Of all the

men I have met since I have been home, these brethren have gone farther in their thinking and prayer in their readiness to crystallize their interest into action, than anyone else.”¹¹

For his part, Jones envisioned such a “Voice of Africa” as part of a larger postwar expansion of missionary radio and went as far as drafting an agreement for the joint project; SIM would supply funds, a site, and license for the station, while Jones and WRMF would provide technical expertise and staffing. To work out the details of the arrangement, Jones met on several occasions with Beacham, Playfair and SIM board members in both Brooklyn, New York and at Wheaton.

The negotiations between SIM and WRMF in 1944 to launch a postwar missionary radio station indicated the difficulty involved in procuring a broadcast license on the African continent. Jones considered that the project’s prospects hung on the Beacham’s success on the ground in Africa in “getting a broadcast license from some government there.” Without such a franchise, Jones averred, “no plan could even be started here at home.”¹² SIM officials investigated obtaining licenses in two countries: Liberia and Ethiopia. In August 1944, Playfair cabled enthusiastically from Africa to say that “Liberia was “wide open to such a missionary station” (in Jones’s words) and urging immediate action.”¹³ However promising, an offer from the Liberian government fell through. In October, Beacham traveled on to Ethiopia, hoping to find favor with the Christian government of Emperor Haile Selassie. Although the direct outcome of this visit is not known, it was likely not met with favor either.¹⁴

Negotiations between SIM and WRMF to establish a joint missionary radio station in Africa broke down fairly rapidly due to several factors. The major disagreement between the two agencies involved a dispute over the form the new collaborative

organization would take, and the related questions whether the venture would come under SIM's control and whether WRMF would play a partner or secondary role. According to SIM's minutes, the agency's board and executive leaders wanted to have the Voice of Africa function "as a department of SIM," – an arrangement unacceptable to Jones and WRMF's directors.¹⁵ SIM's board also balked at the start-up budget of \$200,000 which Jones proposed to construct a series of long and short-wave stations and receiver facilities. Finally, and perhaps most importantly, SIM officials apparently failed to obtain a broadcast franchise. SIM's executive leadership eventually realized their goal of control over an African broadcast station less than a decade later through their negotiations with Watkins and Thiessen. Known henceforth as the "Radio Voice of the Sudan Interior Mission," Station ELWA would provide the mission agency's first entree over the airwaves into the West African region (and the continent) beginning in 1952.

Liberia provided a uniquely amenable environment for the new missionary radio station. In fact, it is highly unlikely that conservative American evangelicals could have started a radio station anywhere else on the African continent in 1954 (with the possible exception of Ethiopia, the only other independent nation in black Africa on the eve of independence). British and French colonial authorities, who still controlled broadcasting on most of the continent at the time, would not have provided a license to an independent American radio station with a sectarian religious mission. The year it began operation, ELWA was not only the first full-time religious station in Africa, but one of only a few independent, privately operated stations on the continent as well. Following the demise of colonial rule, independent African governments extended the colonial broadcasting

model, which they emulated. By the mid-1960s, governments operated nearly three-quarters of broadcast outlets in Africa.¹⁶

Liberia's religious, political, cultural, and geographic environment represented a highly conducive setting for an upstart missionary station. Liberia's religious atmosphere presented "an open door for Gospel radio."¹⁷ Christianity in the country "came to define the perimeters of a ruling class, as did Western dress, European names, and the English language."¹⁸ The ostensible separation of church and state in Liberia represented a thinly veiled legal fiction. A close correlation existed between religious and political office holding among the ruling Americo-Liberian elite in the country.¹⁹ Government leaders from President Tubman and Vice President William Tolbert down to cabinet ministers and members of the legislature frequently preached in mainline Protestant churches and held high church offices.²⁰

Pro-American, nominally Christian officials in the Liberian government received Watkins and Thiessen's license application with favor. Far from objecting to the content of a missionary radio station, the Liberia's ruling elite endorsed the broadcasting of conservative evangelical American religion via the airwaves as an opportunity to extend an Americanized Protestant influence into the outlying areas of the country, still dominated by tribal groups in the early 1950s. Officials granted the Wheaton graduates a highly generous, unrestricted franchise, placing no restrictions of any kind, such as time or power limitations, on the propagation of the gospel message. In addition, the government provided valuable further assets, including a 100-acre grant of coastal land, which it confiscated from local tribesmen, and a duty-free concession on all imported radio equipment.²¹

Liberia offered cultural and geographic advantages to missionary broadcasters as well. The use of English as the official language of Liberia provided a unified audience for ELWA's programs (at least in the greater Monrovia area), simplifying the initial task of programming and allowing the station to use exported American religious programs – an economic advantage, particularly in the early years of the pioneer venture. Finally, the West African republic provided a strategic platform from which to reach target audiences in the entire continent, Moslem North Africa and Middle East, and even Communist Eastern Europe.

Over its first five years, ELWA transitioned from a local station with a limited reach to an international radio outlet with a regional and global footprint. The station began broadcasts on January 18, 1954 using a Collins 1 Kw transmitter on the long-wave frequency 710 KHz.²² Stretching a radius of 50 miles, the all-English programs were intended primarily for Liberians concentrated in metropolitan Monrovia, the nation's capital, where ELWA staff estimated its audience at 10,000 to 20,000 local listeners.²³ On March 14, 1955, ELWA launched its first short-wave broadcast on 25 meters, using a 10 Kw Gates transmitter to broadcast in English, French, Arabic, and the Nigerian tongues of Hausa and Yoruba.²⁴ In the summer, the station experienced increasing problems on short-wave as a result of congestion and Russian jamming and could not get a signal into Nigeria. In August, the station added a lower frequency on 60 meters (4.835 MHz), allowing it to bounce its signal closer in to Liberia.²⁵ The frequency shift succeeded, providing the station with a strong voice in the Liberian hinterland, a thousand miles along the West African coast and across the continent.²⁶

ELWA's potential audiences expanded along with its transmitter power and language programs. Vernacular programming was ELWA's hallmark from the start. By 1955, twenty different languages, mostly local tribal dialects, could be heard on ELWA.²⁷ This impressive list included English, French, and Arabic, the major Liberian tongues of Bassa, Kpelle, Gola, Kru, and Gio, and the Nigerian dialects of Fulani, Hausa, Igala, and Yoruba. The program department broadcast 130 programs in 42 hours per week over the station's long-wave service (710 kHz) and 187 programs in 55 hours per week over the station's two short-wave services (60 meters and 25 meters) in 1956.²⁸ Religious radio producers in the United States, such as evangelists Charles Fuller and Billy Graham and Bob Jones and Biola Universities, exported over thirty different gospel programs from the United States to ELWA by the end of 1956, including the well-known "Back to the Bible" (Theodore Epp), "Radio Bible Class (M.R. DeHaan), Fuller's "Old-Fashioned Revival Hour" (Fuller), and Graham's "Hour of Decision" (Graham).²⁹ ELWA staff produced some sixteen programs by the close of 1956, with titles such as "African Challenge," "Bible Stories," "Morning Worship," "Songs that Touch the Heart," "Strictly for the Ladies," and "Windows on the World."³⁰ The growth of ELWA's listener mail indicates an increasing global awareness of the station's presence on the radio dial. While the station received 59 letters in October 1954, by the end of 1955 the station had taken in over 11,000 for the year. Correspondence hailed from 44 different countries, including 21 different African countries, 11 nations in Europe, and the United States.³¹

Negotiating Scarcity: ELWA's PMR Department, 1954-59

SIM officials, as well as ELWA's founders Thiessen and Watkins, realized before even arriving in Liberia that the lack of radio receivers in West Africa posed a considerable obstacle to their enterprise. Mission boards in the United States had understandably turned down Thiessen's and Watkins' original request proposal in 1951 because they doubted the viability of broadcasting in postwar Africa due to the lack of radio receivers on the continent. "Who has radios in Africa?," they asked doubtingly.³² When he met with SIM's board in the summer of 1944, Clarence Jones made it crystal clear that the "Voice of Africa" would need to supply receivers in order to develop a radio audience. Jones proposed an ambitious \$200,000 budget, at which the SIM officials balked, to simultaneously build several long and short-wave stations and to "develop the radio receiver project so that there would be listeners everywhere."³³

From the station's beginning, broadcasters and SIM officials recognized the need to supply receivers to some of their listeners, notably the rural poor, if they expected an audience for ELWA's programs. Missionary broadcasters generally realized that the shortage of receivers in the developing world posed the greatest single challenge confronting postwar stations. In 1950, roughly 1.5 million receivers existed in Africa - less than 1% of world total – to be compared with nearly 98 million in the United States, 64 million in Europe, and 11.5 million in Asia.³⁴ SIM officials estimated that 140,000 receivers existed in West Africa in late 1953.³⁵ Such a figure, however, masked significant disparities between countries. Ownership of West African sets was concentrated in Nigeria. According to VOA estimates, a mere 4,000 sets existed in Liberia in mid-1953. Using a projected population figure of roughly 860,000, this means that less than 0.5% of Liberians

owned radios – or that just over 4.5 sets existed for every thousand people in the country.³⁶ The Director of Nigeria's broadcasting service estimated that 26,000 people either owned or rented wired and wireless sets in the country, representing an average audience of 140,000, assuming five listeners per box.³⁷ With a population of 31.6 million in 1953, under 0.5% of Nigerians similarly had access to radio receivers.³⁸ Aggregate national data also hid serious regional and social disparities in radio distribution. In Liberia, set ownership was concentrated in Monrovia, which possessed electricity, among the professional and service groups and middle and upper classes, while the poorer rural areas where nearly three-fourths of the population lived with few readily available power sources possessed few radios at all.

The dire scarcity of radios in West Africa derived from a complex relationship between supply and demand forces. Unlike transmission facilities, colonial authorities (and later postcolonial governments) in developing countries made little effort to ensure reception capabilities, leaving such activity to the private sector.³⁹ Given the lack of a large African radio market, however, commercial set manufacturers there engaged in limited production during the early postwar period. The Nigerian Director of Broadcasting, T.W. Chalmers, stated that the lack of listening facilities in Nigeria in 1953 posed the biggest broadcasting problem facing the country as it organized a national radio system on the eve of political independence.⁴⁰

A reflection of their scarcity, radio receivers in postwar West Africa were expensive as well, due principally to the cost of batteries. In 1954, ELWA officials purchased four-tube superheterodyne receivers from Philips through a Liberian agent, who obtained them for the price of \$43.50, including battery.⁴¹ While commercial tube receivers were available

for as low as \$14-18 in May 1956, such a figure did not include the cost of batteries which roughly doubled the cost of the set within one year.⁴²

Finally, the maintenance of radios also posed major problems in the West African setting. Tropical conditions south of the Equator caused unique challenges to broadcast transmitters. “Electrical and mechanical maintenance of equipment” became a major problem, since a single “spot of dust or mould on a contact” could “cause a crackle that [would] deafen thousands.” The only solution to such problems lay in “continual unremitting care and inspection” and “lavish provision of spare parts.”⁴³ Reception facilities were equally affected by climate conditions in the Southern hemisphere. Due to tropical humidity, vacuum tube radios required constant repair. The broadcasting organization in one African country estimated that 40% of the nation’s radio receivers were out of use at any given point in time for maintenance reasons.⁴⁴ Abe Thiessen estimated that maintenance costs for tube radios used for entertainment doubled the purchase price of the receiver annually.⁴⁵

The following history of ELWA’s PMR department from 1954 to 1958 is organized around three basic set operations performed by listeners who borrowed radios from the station. These operations include purchasing or acquiring sets, replacing batteries, and selecting (or pretuning) stations. At first glance, these operations may seem mundane, but this is so only if one takes the relatively well-off, educated and sophisticated consumer in industrialized Western society as the point of reference. In fact, as this chapter will illustrate, these seemingly banal radio issues posed enormous difficulties in tropical environments and were agonized over by ELWA officials themselves. In addressing three key listener operations in missionary reception, the chapter charts how ELWA officials

adopted social, legal, and institutional solutions to not only solve technical and logistical problems of radio usage in the Liberian environment, but to ensure that listeners used the station's radios properly for the purpose of receiving ELWA's missionary programs.

Set placement

Given the high cost of radios, ELWA broadcasters and SIM officials debated extensively whether to sell receivers to listeners or provide them free of charge. Station and project managers frequently equated the sale of sets with a loss of influence over how they were used. Abe Thiessen adamantly opposed the sale of missionary receivers to Africans because it "leaves us without any control over the ministry of these radio sets."⁴⁶ Thiessen and other officials favored accepting funds from donors in American churches to pay for the initial purchase price of receivers, which ELWA then distributed to Liberian nationals on the station's own terms. Giving away sets provided an additional benefit. If ELWA did not sell its receivers, the Liberian government waived import duties on radios, reducing their cost. Watkins believed that providing radios to nationals free of charge, in Watkins' estimation, would "establish good public relations" – a clear priority for the new station.⁴⁷

In lieu of selling radios or donating them outright, ELWA broadcasters settled on a compromise policy of set "placement." By placing sets, officials accrued the benefits of giving away sets, while maintaining control over how they were used. Shortly after beginning broadcasts in January 1954, ELWA officials used funds donated by Robert Vander Hooning, a wealthy American businessman, to purchase 100 four-tube superheterodyne Philips receivers,⁴⁸ placing them within the roughly 50-mile radius of the station's 1 Kw long-wave transmitter.⁴⁹ In greater Monrovia, where people could afford

radios and where ELWA located the vast majority of its radios, PMR personnel placed sets with individuals temporarily, hoping to excite listener interest. Station personnel then intentionally relocated radios to feed a larger public, expecting that Liberians would then purchase their own sets. In rural areas where villages numbered 25-100 people who could not afford radios, on the other hand, PMR workers left sets indefinitely.⁵⁰ ELWA workers realized the costs involved in rural location, since placement of sets in areas at a distance from the station required reliance on Liberian nationals to follow placement instructions, which insisted that they be made available to people like “native Christians” and “chiefs or leaders in remote villages.”⁵¹

From the outset, ELWA’s set placement approach included a legal backbone. Under the station’s initial “placement” strategy in early 1954, officials maintained ownership and legal title to radios by loaning the station’s receivers to individuals. Set borrowers signed a “Receiver Loan Agreement” with the station. The contract stipulated that ELWA agreed to lend one of its portable radios “for purposes of listening to its religious programs.”⁵² The contract gave the station the right to demand delivery of sets in good and reasonable condition from the borrower at any time without notice, while requiring the latter to pay the cost of replacing the set’s batteries.⁵³ Since ELWA distributed its first 100 sets near the station, station managers believed they could enforce proper usage of radios by confiscating sets that were either inappropriately used or which sat idle (if borrowers failed to install new batteries). The system of loaning sets thus provided station managers with a limited degree of indirect control over set usage. Herschel Ries, ELWA’s technical director, feared that missionary stations which could not implement ELWA’s loan system would have little say over how listeners used sets: “[W]e will have to resign ourselves,” Ries

wrote, “to little or no control of the sets in some places - the only control must be left with the Holy Spirit in these cases.”⁵⁴ Such spiritual dependence, while perhaps inevitable, represented a second choice for Ries to operational control.

Between 1954 and 1959, ELWA managers developed a more sophisticated approach to set placement. While the station continued to lend sets, it took extra steps to actively ensure that sets were used properly by more closely regulating who actually received them. Managers articulated three clear social and economic criteria to govern the choice of where to place receivers. “Economical placement” meant putting sets where they would “reach the greatest number of people.” Proper stewardship or maintenance required placement where sets would “have the best care” and where borrowers would replace batteries regularly so that sets did not sit unused.⁵⁵ Finally, “effective” placement involved placing receivers where they would be turned on and off at the right time, conserving precious battery power and ensuring that listeners tuned in the radio at precisely the right time and listened only to gospel programs in their language.

During the same period (1954 to 1959), ELWA managers developed two new additional mechanisms to place receivers: the screening of applicants to carefully select who should receive sets, and indoctrination of borrowers in order to inculcate the proper mentality in listeners. Borrower selection was a slow process involving data compilation and management intended to pre-select candidates who were genuinely interested in hearing the gospel message. Bill Watkins, ELWA’s co-founder, recommended broadcasters find out as much as possible about people in individual villages from “previous information.”⁵⁶ In order to compile data, program administrators adopted an extensive questionnaire which allowed them to categorize and prioritize applicants. The “Radio

Receiver Application Blank” used by the station included the name, address, mailing address, and occupation of the applicant. Officials gauged applicants’ religious commitments through a series of questions, asking potential borrowers to provide evidence of their genuine Christianity, Church affiliation, and whether they served in an official capacity as a minister or missionary. The questionnaire also asked applicants to indicate the proximity of any church and missionary, indicating the name, affiliation, and proximity of the pastor and mission station. Station officials asked prospective listeners a series of personal questions, checking whether they were prey to “unacceptable” local social practices, including whether they drank cane juice, played Sass Wood, and used country medicine! In order to estimate whether applicants would use receivers as desired, station officials wanted to know the number of people who would listen to the set, whether the applicant would buy a radio if available, and their reasons for wanting a radio. Applicants had to provide three references from non-relatives. To evaluate appropriate set types, managers asked applicants the distance and direction of their homes from Monrovia and whether listeners’ homes had electrical power. Finally, station personnel asked applicants to sign the paper, informing them that filling in the application did not mean the promise of a radio. Space on the application reserved for office use indicated whether the application received priority attention and whether the station would accord the listener a longwave or shortwave and battery or electric set.⁵⁷

The use of legal procedure and forms to regulate usage of missionary receivers was also practiced by another major missionary radio station. Starting in 1948 at the same time that it began broadcasting in the Philippines, the Far East Broadcasting Company (FEBC) had established a vibrant “Portable Missionary” (PM) receiver program, using

battery-powered tube sets assembled by the station. Along with the program, FEBC established a series of “PM listening clubs,” based loosely on the pre-WWII model of HCJB’s Radio Circle.

“PM Clubs” involved an elaborate set of social conventions loosely codified in a series of quasi-legal procedures. Following application to the station and often after a long waiting period, officials selected individuals for the privilege of acting as PM listening club “captains.” PM captains signed a loan agreement with FEBC which contained a “list of instructions that go with each set.” If a captain failed to abide by contract conditions, FEBC would recall his set.

FEBC’s listening club loan agreements covered three basic areas of maintenance, evangelism, and monthly reporting. FEBC expected each PM club to make a set deposit of 10 pesos, which the station refunded if it found the radio in “proper condition” when returned. The station also counted on PM club members to pay regular “club dues” of one peso per month in order to help pay for new batteries, which generally lasted 5-6 months. In addition to maintaining the station’s radio and supplying it with batteries, PM captains were expected to be “diligent in inviting neighbors.” Captains placed a sign by the door of his house, inviting neighbors to come and enjoy their radio and afterwards “encourage[ing] listeners to respond to the message.” PM captains were “responsible to report monthly to the PM national office regarding listener activity during the month.” The monthly “PM Report” summarized monthly listener activity and included numerous figures, such as the number of new listeners and souls won during the previous month. While soliciting individual applications, FEBC also distributed receivers like ELWA through a range of missionary societies, as well as national organizations and the

Philippine government, which employed FEBC PM's as part of its anti-communist program in Filipino barrios (or villages).⁵⁸

In Watkins' view, proper placement in the Liberian context required that station officials not only select the proper borrowers, but employ the right "psychological" approach, which Watkins openly referred to as "indoctrination." After screening them and having them sign an agreement, station officials briefed borrowers on how to use their sets "properly." Officials emphasized to recipients that the radio had been "entrusted to them" as a "wonderful privilege"; radio operation was a serious "responsibility" that required "great wisdom." The radio was the "special care" of the borrower; he alone could touch the receiver. As a "responsible" person, station officials expected users to employ the "tool" of radio "advantageously," maintaining the equipment and ensuring that only groups listened to the radio in the village.⁵⁹ ELWA carefully trained operators to turn sets on only during ELWA broadcasts, virtually assuring an exclusive audience for ELWA broadcasts on the station's receivers. In addition to filtering out unwanted competition, regulating on/off usage conserved power and prolonged battery life, a major concern for ELWA managers given the relative shortage of sets in Liberia prior to 1959. Coordinating set usage also reduced the continual problem of set idleness. In May 1959, PMR staffers estimated that 90% of the station's roughly 300 receivers sat in homes where as many as 50% lay unused.⁶⁰ Not only did idle sets spell wasted assets for station officials, but unused radios drained batteries due to power leakage.

The success of the ELWA's indoctrination program hinged on making a series of fundamental distinctions around the radio receiver, which delimited both the set and borrower from their surroundings. Such distinctions were made possible, in turn, by the

extreme scarcity of radios in Liberian villages during the 1950s. By separating the radio and its operator out, ELWA managers and workers attempted to translate the technological uniqueness of radios in rural West Africa into a basis for mental disciplining of set operation. Prior to the arrival of pretuning technology, station officials relied on people rather than devices to filter programs and coordinate receiver usage.⁶¹ Watkins claimed a high degree of success for ELWA's psychological placement approach, maintaining that it turned the individual into "the ideal receiver operator" and produced excellent care of receivers, with almost no breakage of borrowed sets.⁶²

The scarcity of sets in West Africa before 1960 allowed radios to acquire a ritual status in Liberian villages, which station officials sought to maximize in order to capture listeners. Watkins maintained a stereotypically racist view of his listeners, arguing that "a certain ritualism pervades everything that the African does." Watkins described the ritual surrounding receiver operation in a typical Liberian village. The individual responsible for the radio designated a special table or stand for the radio and employed a special table cloth, which was 'pretty' and was used to cover the set when it was not being used. At the time of the program, the table was drawn out "with a flourish" and placed on the porch or central kitchen of the village. Next the individual placed the table cloth, then the radio, and finally a clock on the table. The operator checked the radio, which he "experimentally tuned on several times and then off," then checked the antenna and battery connections repeatedly before finally turning on the set for good.⁶³

Radio ritualism involved the sanctification of commonplace industrial Western artifacts in an African setting through the repetition of closely regulated routine.⁶⁴ In addition to scarcity, regulating when borrowers turned sets on and off also proved critical

to maintaining the ritual status of radios. Watkins made it clear that two further ingredients were required to maintain radio ritualism. First, ELWA's vernacular programming made it possible for listeners to hear programs in their own language, implanting broadcasts with a distinct aura in the minds of villagers. As PMR staff attested, Liberians identified sets literally with vernacular programs in their own tongues. In 1958, villagers came to ELWA's repair shop to exchange radios not because they had broken, but to obtain different sets which spoke more of their language.⁶⁵ Second, restricting villagers from hearing ELWA's vernacular broadcasts in other tribal languages consolidated the ritual status of the set by setting it further apart. As Watkins commented, "[i]f the radio is turned on for programs other than the ones in the specific language of the people the radio loses its appeal, the noise and the talking that comes out of the little 'box' becomes commonplace, and they get to used to hearing it so that the audience is small at the time of the language broadcasts for that area." In order to prevent listeners from reducing the radio to a taken-for-granted background 'noise' in their homes and villages, to which they paid little close attention, ELWA personnel instructed "responsible" borrowers exactly when to turn radios on and off when the sets were issued. Prior to 1959, missionary "capture" (control of set operation) thus required not only the proper distribution of receivers, but the coordination of set operation as well. As Watkins stated,

"[I]t is a distinct problem of distribution to properly convey the instructions as to when the set must be turned on and off. When to turn it off is as important as to when to turn it on. They must be instructed in such a way that they feel the responsibility of turning to the programs that will do them some good."

Watkins remained confident that if broadcasters properly coordinated the times when sets were turned on and off, they could expect large captive audiences, since “nearly 100 percent of the village will be listening.”⁶⁶

The effective repetition of the radio ritual required that the radio receiver did not move. With notable exceptions, such as the case of itinerant evangelists, missionary radio stations discouraged the relocation of borrowed sets. As use of the term “placement” implied, ELWA developed an acute interest in the physical setting where listeners operated sets, since locale affected critical listening factors such as reception and group availability. Immobility of receivers served several objectives for ELWA in addition to enhancing the ritual status of the radio receiver for villagers. Stability facilitated technical reception of broadcasts, regularized set usage so that a village public could develop consistent listening habits around ELWA’s programs, and made it easier for officials to locate receivers. Hence, when missionary users referred to “portable radios,” they meant something vastly different from commercial radio manufacturers in the industrial West. “Portable” for missionary broadcasters did not mean mobile (or even small), but simply battery powered – an essential prerequisite for sets in remote rural areas, which lacked electricity.

By April 1957, ELWA had distributed roughly 225 receivers, the vast majority in areas adjoining the station in Monrovia where they could be most easily distributed and monitored. Supply of affordable sets, however, could not match demand. By the same period, ELWA’s PMR managers had compiled a list of names and addresses of to 300-400 applicants for radios and had to turn away what it considered valuable requests for sets from Liberians due to a shortage of supply.⁶⁷ According to Watkins, station officials had “a stack of appeals from African chiefs” for receivers.⁶⁸

Two letters typified the types of requests for radios from Liberian nationals which station officials had to turn down due to a shortage of supply. In June 1958, James K. Sumbo, a worker at the Firestone Hospital located in Firestone's Plantation in Harbel, Liberia, wrote to the station wondering if ELWA radios could be installed in the hospital. Sumbo had formerly worked at the Liberian Government Hospital while in high school, where he saw two "simple radios" installed for bed patients on the second and third floors. Sumbo praised ELWA's action: "Your decision in doing so has been considered very wise and essential for such invalids some of whom suffer from protracted illness and might never depart from their sick beds until summoned to eternity." Ray de la Haye favored Sumbo's excellent idea, but indicated that, due to a shortage of sets, the station had no radios to distribute while it waited on new sets under development to arrive in Liberia.⁶⁹

Another letter three months indicated a typical receiver request in Liberia. Gordon Cisco, a member of the Lutheran Mission in Liberia's Central Province and a self-described "member of the Christian family," requested a radio from the station. Cisco cited his need for English-language preaching outside of his home province:

"Right now I am here working for the Lutheran Mission in Belefanaï (?) but I can not understand the Kpelle language and every sermon that is preached is done in Kpelle by the Pastor. Those of us who are teaching here sometimes have to go in the town to listen to some of our friends' radio to hear Pastor Howard O. Jones, your radio Pastor"

De la Haye responded to Cisco's request as he had to Sumbo's two months earlier by indicating a station shortage of sets: "We are still waiting for a supply of the new transistor operated radios." De la Haye enclosed an application form for a PMR, suggesting Cisco complete the form and mail it the station, where it would be put on file

with all applications received in the past three years for future evaluation. Sumbo's and Cisco's letters together indicate a sizeable demand for receivers among Liberian Christians in the summer of 1958, which station officials could not meet and which they hoped to address through a supply of new transistor radios from America.⁷⁰

Thus, prior to the diffusion of the transistor radio, receivers in West Africa were costly and rare. Missionary broadcasters with Station ELWA capitalized on receiver scarcity as best they could by implementing a regime of social regulation, screening and indoctrinating borrowers in order to promote disciplined listening to ELWA's programs. Receiver placement involved station workers in coordinating radio usage on a daily basis through a carefully constructed set of regularized relations with listeners.

Battery Problems

Set shortage did not comprise the only difficulty confronting missionary officials. The mundane technology of radio batteries fundamentally challenged the ability of broadcasters and engineers in the mission field to capture listeners by regulating set usage. Radio missionaries faced obstacles with power cells in two basic areas, relating to battery replacement and problems of battery maintenance. Prior to the invention of the transistor (which dramatically lowered power consumption), maintaining vacuum tube sets in tropical environments proved an intractable battle for missionaries. Since tube sets regularly "consumed," or drained, power, batteries became a crucial, recurring interface between broadcasters, listeners, and commercial suppliers. Missionary personnel had to usually rely on listeners to purchase batteries and replace them in the set, a quotidian task in the

industrial West by the 1950s but a considerable challenge in remote areas of developing countries located outside the cash economy.

Missionary engineers identified battery replacement at an early date as the key to resolving the shortage of affordable receivers in the developing world.⁷¹ The cost of batteries was the single largest expense in keeping up vacuum tube sets.⁷² The battery consumption of tube sets was so severe that some broadcasting officials considered them impractical for the mission field.⁷³ In early 1954, commercial American radio manufacturers produced portable inexpensive tube-based, battery-powered sets in both the standard AM broadcast and short-wave bands, priced as low as \$15-\$25.⁷⁴ ELWA officials could purchase commercial receivers in Liberia for \$14-\$18 in early 1956. Yet tube receivers in 1956 consumed roughly \$18-20 a year in batteries in Liberia, an amount easily equaling their purchase price.⁷⁵ Battery maintenance proved an intractable obstacle for missionaries using radio worldwide. A missionary in the Philippines reported that most tube sets Filipinos acquired from FEBC sat unused because of the expense of replacing their large, expensive, and short-lived dry cells: "I noted that the placed sets usually were shelved after a battery or two, as the operators were just not able to pay for the batteries or they were just to [sic] difficult to get."⁷⁶ A technical solution to the battery problem would find a global missionary market.

In addition to their cost, the availability of batteries overseas also constrained how missionaries could use radio receivers. The experience of colonial administrators in Northern Rhodesia had demonstrated that cheap battery tube sets could be used successfully in rural areas if "trading interests" cooperated in supplying new batteries.⁷⁷ Yet commercial distribution posed significant challenges in many developing countries.

Batteries used by numerous American-made sets were not readily available in many countries overseas.⁷⁸ Batteries manufactured overseas, furthermore, did not come in standard sizes but varied in length by fractions of an inch. Because foreign batteries differed in size, users did not always have good electrical contact in sets.⁷⁹ Battery replacement, finally, posed practical problems as well. ELWA technicians found that one of the two problems they encountered most frequently with Philips superhet tube sets was that batteries could be forced in the wrong way, burning out the set's tube filaments.⁸⁰

Between 1954 and 1959, ELWA broadcasters adopted similar legal and social solutions to resolve the problems of battery replacement and maintenance that they had utilized to regulate set placement. Under ELWA's "Receiver Loan Agreement" implemented with the station's initial sets, the borrower agreed contractually to replace the set's battery at his own expense, deferring the cost for the station. Battery replacement represented a key criterion guiding station personnel in their placement of sets and selection of borrowers. Since radios were designed primarily for group use, ELWA expected villages to pay for new batteries as an entire community. In order to defray the cost of batteries among villagers, Watkins advised placing sets with "individuals who could command obedience on the part of the other villagers so that when it came time to raise money for the new battery, the money could be raised comparatively easily."⁸¹

ELWA officials attributed maintenance problems with radio batteries in part to the ethnic characteristics of Africans. Station managers observed that inoperable sets would sit unused for months in Liberia after batteries failed, despite specific instructions left with the receiver. For Watkins, this was due to a "distinct lethargy" in the "African way of life" and "a tendency to ignore a thing if it does not work" – a recourse to classical racist

stereotypes. Station staff expressed concern that a polarity fool-proof battery holder designed by missionary engineers would still prove “confusing to a National.” Since written instructions would provide no help to illiterate Africans, ELWA officials recommended “a picture of some kind [directly] under the battery holder” to guide the set user in how to exactly replace batteries.⁸²

The implicit racism in much of this thinking is evident: mission officials and trained engineers actually had just as much difficulty with batteries. In fact, battery operations required technical skill and tacit knowledge for their operation. In October 1957, Herschel Ries reported that it took two men in SIM’s New York office nearly an hour to properly install batteries on a test set and get it working.⁸³ In October 1958, Thiessen recounted a story of an engineer for Wycliffe Bible Translators in charge of communications for a mission post in the South American rain forest, whom Thiessen mailed a test shortwave set in October 1957. The engineer never wrote Thiessen nor answered follow-up requests for data. When Thiessen encountered him at the World Conference on Missionary Radio in June 1958 in Chicago, the engineer complained, in Thiessen’s words, that the set was “utterly useless and had never worked from the very start” and enthusiastically agreed to return the set, which he considered a “piece of junk,” in Thiessen’s words. Since the engineer happened to have the set with him in his car, Thiessen had engineer Hank Voss inspect the set. Voss put in a set of flashlight batteries and found the set “worked beautifully,” picking up Station HCJB from Chicago. Though technically trained, the Wycliffe worker had not ensured good battery contact, making what might be regarded as an elementary mistake which allowed a valuable field set to sit needlessly idle for eight months.⁸⁴

The Debate over Pretuning Receivers

Between 1954 and 1959, SIM officials and ELWA broadcasters engaged in an extensive debate about the merits and technical possibilities of pretuning radios in the West African context. This debate mattered for several reasons. First, by 1960 missionary stations around the world (including ELWA) universally adopted pretuning as the *de facto* method of radio capture. Second, missionary engineers in Chicago developed a pretuned transistor receiver between 1954 and 1959 (an effort detailed in the next two chapters). ELWA served as the major field test site for the project's pilot models; in the process, officials developed a strong interest in fixed-circuit technology. Finally, the difficulty of pretuned reception in the West African region demonstrated the technical and political complexities involved in using technology (as opposed to humans) to perform the function of reception, a central topic in the second half of the dissertation.

The debate over pretuning revealed important fissures in the running of ELWA between the station's broadcasters and its parent overseers with SIM. Though they shared a common vision of reaching Africa by radio, SIM field executives and ELWA operatives differed markedly in outlook, allegiance, and background. As career missionary workers, headquartered in Nigeria, SIM officials viewed radio as one means among many to reach target populations, alongside the mission agency's far more extensive newspaper and literature campaigns. Given that the traditional field of activity over a half century had lain in Nigeria, where the mission sited its regional headquarters, SIM officials understandably identified Nigeria (rather than Liberia) as their agency's primary target. By contrast, many of ELWA managers and engineers possessed technical backgrounds in radio work. Most of them had attended missionary training institutes in the United States or conservative

evangelical colleges, such as Wheaton. Having felt the call of missionary broadcasting, they had been recruited directly to work for ELWA (rather than for SIM). Based in Monrovia, a primary (though by no means exclusive) focus of ELWA broadcasters remained reaching audiences in the republic itself and its remote hinterland region. While SIM executives in Jos, Nigeria maintained administrative and financial control over ELWA, the day-to-day operation and technical management of the station lay completely in the hands of the station's own experts, creating a working arrangement rife for conflict.

The idea of using “pre-tuned sets that are tuned in only to ELWA” had lain in the minds of SIM officials from the station's start. Due to the lack of commercially available models, however, J.O. Percy, a SIM field mission leader, felt that pretuning would require custom designing a “suitable” receiver and assembling it from parts in Liberia, as practiced by other missionary stations, such as HCJB and FEBC. As a result, such an objective remained a long-term planning goal that officials felt was “some years” away in early 1954 when ELWA began operations.⁸⁵

Pretuning appealed strongly to a range of groups involved in missionary radio for a variety of reasons, including missionary agency officials, station representatives, financial donors, and conservative religious program producers in the United States. Pretuning provided a point of unifying agreement among mission and station officials, who felt a mutual moral responsibility to avoid tempting listeners with worldly programming – a problem which pretuned receivers addressed by radically constraining the listening freedom of set borrowers. In early December 1956, John Wiebe, acting field director for Nigeria, attended a two-week long meeting of SIM's District Superintendents in Jos. The district leaders complained loudly about problems with sets that were not

pretuned, which allowed listeners excessive freedom of choice in program selection.

“[The superintendents] find that these people are tempted to listen to many other programs besides, or sometimes instead of ELWA,” Wiebe wrote after the meeting.

“They have had severe disciplining problems with a few and as a whole these receivers just don’t seem to be working out.” In order to “discipline” listeners, the Jos Council recommended that ELWA either distribute only fixed-tuned receivers “so that only ELWA could be heard” or else end its PMR program.⁸⁶ Similarly Abe Thiessen, the co-founder of ELWA, opposed the use of an “open” (i.e. non-pretuned) set because it would permit tuning to “local jive” and “other junk,” as well as religious programs (such as Muslim broadcasts) and Communist propaganda.⁸⁷ Thiessen did not want the African listener to purchase inexpensive, non-pretuned commercial sets, since “with them he will listen to the cheapest trash that’s available.”⁸⁸

Pretuned receivers represented a potentially strong selling point for ELWA to two critical financial constituencies in the United States: rank-and-file conservative evangelicals, who donated the funds for the PMR department, and prominent program producers, such as Billy Graham, Charles Fuller, and Theodore Epp, who largely financed the station’s operation in its early years by buying up air-time. Abe Thiessen defended pretuning on the grounds of its importance, not to African listeners, but to these core American supporters. In his view, fixed reception represented “one of the most attractive features of our ministry” for “our [American] Christian public” because it ensured that sets could only pick up “the Gospel message as broadcasted from the missionary station.”⁸⁹ Pretuned sets guaranteed that funds provided by these two groups

would be properly utilized by providing exclusive, closed reception of ELWA broadcasts in areas where listeners could pick up other stations.

Lack of pretuned reception, conversely, could block financial support from backers. In late 1953, Robert Vander Hooning, a Michigan businessman interested in missions, offered to finance 100,000 radios for distribution through SIM in the West African mission field. After conducting his extensive research several major American radio manufacturers, Vander Hooning located numerous models priced below \$25. Vander Hooning abandoned his effort, however, when he could not find commercial pretuned sets.⁹⁰

Though pretuning appealed to various conservative evangelical constituencies (particularly in the United States), it posed a host of practical difficulties for missionary broadcasters in the field, particularly for ELWA's markets outside Monrovia. Many of the problems experienced with pretuning derived from differences between longwave and shortwave broadcasting, which possessed fundamentally different technical characteristics. Propagating low-frequency waves a limited distance along the ground by direct line of sight, long-wave transmitters proved most useful for broadcasters in high-density population centers, where a single frequency provided adequate local coverage. Short-wave transmitters, on the other hand, relied on ionospheric propagation, bouncing radio waves off the upper layers of the earth's atmosphere to cover great distances and large geographic areas. Missionary radio stations invested overwhelmingly in shortwave services because of their greater coverage and economy and because they allowed broadcasters to reach politically closed countries or geographically inaccessible regions.

Despite its considerable benefits, shortwave broadcasting posed considerable practical challenges for missionary radio stations. Given their mode of atmospheric propagation, short-wave signals were subject to considerable variations in signal strength due to “location, time of day, and sunspot conditions” and required continual monitoring and adjustment.⁹¹ Unlike longwave, shortwave signals suffered significant interference from deliberate jamming, electromagnetic static in the atmosphere, and neighboring stations located close together (less than 5 MHz) on the radio spectrum. Short-wave sets consequently required greater selectivity and a fine-tuning mechanism to differentiate incoming signals and reduce distracting noise.

An account from a missionary radio user demonstrates the limitations of shortwave broadcasting as an evangelistic tool in the field. SIM missionary Derek Porter in Ilorin, Nigeria described the difficulties of shortwave reception in 1958: “Because there are so many stations on about the same frequency I need to constantly tune the [external] fine adjustment [knob] else other stations begin to pull in louder and drown out ELWA.” When Porter took his set into town to use it on the street for a “Radio Revival,” plugging in an external speaker to broadcast ELWA’s Yoruba programs, reception difficulties hampered his effectiveness: “The people say they hear it well but at 5:15 or 5:30pm there is much other station interference and I need to keep my hand on the fine adjustment most of the time”⁹² Lower frequencies presented more stable signals than higher frequencies and missionary technicians found it far easier to pretune broadcast band receivers than shortwave ones: “Technically it is unwise to pre-tune a short-wave set; however, to pre-tune a long-wave set is very advantageous.”⁹³ In sum, short-wave reception represented an imperfect art, or craft, rather than a precise science.

To compensate for interference and atmospheric vagaries, international broadcasters usually transmitted on multiple frequencies occupying different bands, further complicating the task of fixed tuning. Since the Nigerian government did not license private domestic stations, ELWA broadcast in 1957 on four shortwave frequencies daily: 12, 25, 31, and 60 meters. The BBC's World Service and French stations broadcast into the same country simultaneously on 19, 25, and 31 meter bands the following year.⁹⁴ International stations constantly shifted their frequencies to adjust for changing propagation conditions. Typically, from April to October 1957, ELWA technicians resorted to frequently shifting frequencies in order to find a clear broadcasting channel. Since numerous other stations also shifted frequencies, station personnel faced considerable future uncertainty: "we never know when we will have to jump again."⁹⁵ In response to atmospheric uncertainty, international short-wave broadcasting relied on flexibility in transmission and produced vagary in reception.

ELWA employed both long and short-wave transmitters in order to reach numerous national and international audiences. While ELWA utilized its longwave service to reach large listening publics in the densely populated metropolitan Monrovia area, the station relied on its shortwave platform to reach listeners in an array of key markets removed at various distances from the station: farther in the Liberian hinterland, where the station enjoyed far greater popularity; in Nigeria, where a state monopoly prohibited private local broadcasting; in East Africa and Muslim North Africa; and overseas, particularly in Europe. No other sizeable station broadcast on longwave in Liberia prior to 1960, when the Liberian government formed a public-private joint venture to manage a major commercial station (a subject discussed further in chapter 9). As a result, ELWA enjoyed a clear

channel and a practical monopoly of the AM spectrum during its first five years. The small number of Liberian listeners who could afford shortwave sets looked outside Liberia (or beyond ELWA) to the higher frequencies and international broadcasters for considerably greater variety in programming.

In addition to technical challenges, pretuning of receivers also raised political problems in certain West African countries. Opposition to pretuned receivers was strongest in Nigeria, a country which offered a significantly different broadcast environment from Liberia. Broadcasting in Nigeria had strong political overtones, dating back to the colonial period. Colonial British authorities established broadcasting in Nigeria in 1935, opening the first wired broadcasting station for British subjects in Lagos in 1935 and adding ten subsequent wired stations, including Jos, by 1948. Following Allied success with radio propaganda during WW2 and the advent of colonial self-rule, which culminated in the adoption of a federal constitution, the Nigerian Government modernized its broadcast facilities. The pre-war system was replaced in 1952 with a coordinated network that distributed transmitting and studio facilities between the central government and the country's three regions. On the eve of political independence in 1960, the Nigerian Broadcasting Service functioned to encourage national political unity, reinforcing the Nigerian state's power and balancing national and regional identities in the country. The Nigerian government decided against allowing privately-owned radio stations in the country, a policy it continued after independence.

The most populous country on the African continent, Nigeria offered a vast potential listening audience for ELWA. Despite their number, however, Nigerians in the mid-1950s enjoyed relatively little listening freedom. Large towns such as the capital

Lagos had centrally wired loudspeaker systems, a remnant of their nation's colonial past. While the sale of commercial sets was increasing rapidly by 1954, most Nigerians, particularly in rural areas, rented loudspeaker "boxes" tuned to the government service from either the company Rediffusion (Nigeria) Ltd. in the country's Western Region and from the Department of Posts and Telegraphs in the Northern and Eastern Regions.⁹⁶

ELWA's parent mission agency, SIM, had a close pulse on developments in Nigeria as the nation approached independence. Headquartered in Jos, SIM had over a half-century history of involvement in Nigeria, dating back to the mission's founding in 1893, and had established some 90 stations in the country by 1950.⁹⁷ SIM officials in Jos provided Abe Thiessen with extensive feedback on the design of a new missionary transistor receiver, since Thiessen intended to pre-tune sets. Ray Davis, the Acting Field Director in Nigeria in early 1957, rejected the idea of pretuning receivers in Nigeria, since Nigerians would not accept them: "[s]everal here have expressed their opinions that they do not even want a set if they cannot tune to any station they wish."⁹⁸ Writing in the spring of 1957, Guy Playfair, SIM's General Director and a legendary leader of the agency, tied Nigerians' rejection of fixed-tuned radios to independence movements afoot in West Africa. Playfair openly doubted Nigerians would tolerate pretuned radios, particularly in Lagos, where many had bought their own radios, angered and disgusted at their inability to "get what they want to hear" on government-issued "diffusion" sets. In Playfair's view, listeners expected a degree of listening freedom commensurate with the approaching experience of political independence: "... Nigerians, and especially now with the independence of Ghana..., millions of them are too much enlightened and too independent minded to be tied down to any pre-set machine or any machine controlled by others, even their own country men, as

the diffusion sets [wired receivers provided by the colonial broadcasting service].”⁹⁹ After meeting with Ray Davis and ELWA’s technical staff in October 1957, Herschel Ries concurred based on feedback from SIM officials on the ground in Nigeria that pretuned receivers simply would not work in Nigeria: “With rising feelings of independence, they want a choice in everything.”¹⁰⁰ In Nigeria, social and political opposition to pretuning proved as obdurate as technical difficulties.

In the period prior to 1959, the debate over pretuning at ELWA centered on the political and technical feasibility of the practice in ELWA’s largest radio market, Nigeria. The necessity to broadcast on shortwave frequency into Nigeria, combined with the country’s move to independence, made it impossible to impose fixed reception on Nigerian listeners, despite the desires of various SIM leaders.

The attitude of ELWA managers to pretuning in Liberia prior to 1959 differed markedly from that of SIM officials in Nigeria. Here, due to the lack of broadcasting competition, ELWA managers displayed relatively little interest in the pretuning technique until 1959. Though HCJB and FEBC had both adopted fixed reception universally on their receivers by 1950, ELWA waited nearly a decade to follow suit. The main reason was obvious; the station did not have to do so to maintain its main audience. Until 1959, when the Liberian government began its own broadcasting operation (ELBC), ELWA faced almost no competition on long-wave in Monrovia, its largest market (although it faced considerable competition from international broadcasters on its shortwave service in the hinterland). ELWA also obtained its sets commercially. Though it began experimenting with test pretuned transistor sets produced by Chicago-based missionary engineers in 1956, it did so only a small scale. Transistors, rather than pretuning *per se*, represented the key

selling point for ELWA engineers on these experimental sets. As the next three chapters will show, the success of the missionary transistor receiver project in Chicago, combined with the arrival of the government station ELBC in 1959, prompted a major shift in thinking of ELWA's managers and led to the whole-sale adoption of pretuning after 1960.

Conclusion

Radio Capture as "Social Regulation"

By September 1960, ELWA had distributed approximately 350 portable radios, about 275 of which it placed in the station's immediate area of Monrovia and 75 of which it placed in the interior of Liberia.¹⁰¹ In addition to the high cost and limited supply of radios, other factors limited the growth of ELWA's PMR department prior to 1959. These included the difficulty of servicing vacuum-tube sets, which consumed large amounts of battery power. In the pre-transistor era, batteries too proved expensive and difficult to obtain in Liberia, particularly in remote areas. Though the station debated the viability of pretuning radios in Nigeria to enhance proper reception, SIM officials decided against it in the end due to technical difficulties and insuperable political obstacles and the recognition that no one wanted it.

To compensate for limited growth and maximize use of resources, ELWA officials developed a pragmatic approach to set usage which the dissertation has labeled "social regulation." This involved controlling set usage largely through institutional procedure and social convention (rather than through technical means), which managers communicated through ideological inculcation and backed by weak legal enforcement. Station officials decided early on to donate rather than sell sets because it enabled them to

maintain control over inventory. As developed by ELWA managers and station workers over five years, social regulation contained two principal components: set placement and indoctrination. By screening borrowers through a questionnaire and application, proper placement of sets with Liberian Christians ensured the radios' continual care and proper spiritual use. A "psychological" equivalent of a training course for set borrowers inculcated a set of general attitudes and precise guidelines governing set usage in order to ensure the set's spiritual power and battery life were preserved. Station workers mimicked and took advantage of the indigenous practice of radio ritualism in certain Liberian villages, enhancing the standing of the station's programs by closely prescribing and limiting radio usage.

Social regulation as developed by station personnel capitalized on the exceptionalism of radio receivers in Liberia in the pre-transistor era, where radio sets still received ritual attention in remote parts of the country. Edwin Kayea, an African program manager at ELWA commented, noted that radio still seemed a "wonder" in most of Liberia outside the capital as late as the early 1960s.¹⁰² What distinguished ELWA managers is the subtle and imaginative ways in which they transformed the apparent liability of set scarcity into a quasi-asset for the station. "Radio ritualism" and long waiting lists reflected a similar principle of operation at work in ELWA's PMR program in its first five years – namely, status through separation and distinction. Emile Durkheim has shown how the act of separation distinguishes the divine from the profane, creating a sense of the sacred. Through a rigorous indoctrination program, ELWA workers trained set borrowers to treat radios as objects apart. Without realizing it, ELWA managers mimicked this logic, reaffirming the religious sense among listeners (and their sensibility

to the gospel) by carving out distinct listening niches and habits for the radio. Pierre Bourdieu has revealed how social distinctions, reinforced by the judgment of taste, create social status and capital. ELWA managers played off this too, utilizing the iconic status of radio ownership in 1950s Liberia to building a halo of respectability around the gospel.¹⁰³

Through social regulation, ELWA officials shrewdly negotiated scarcity of receivers into greater status (and openness) for their gospel presentation. Managers translated the iconic status of radio as a rare commodity in West Africa and their standing as purveyors of technological progress into cache for the gospel cause. Like their counterparts in Ecuador, but in a far more roundabout way, ELWA officials utilized the materiality of radio (here the status of ownership), along with its prestige as an almost magical vehicle of communication, to promote their traditional presentation of the gospel, broadly legitimizing their conservative American religious message by association. In the Liberian bush, it was next to impossible for villagers to disentangle the meaning of the medium (of radio) from that of the conservative evangelical message. ELWA managers such as Bill Watkins and Abe Thiessen sensed this inextricable tangle intuitively and worked it to their evangelistic advantage.

The history of ELWA's PMR department during the initial period of 1954 to 1959 demonstrates clearly that radio capture was a social construction. In order to properly regulate the usage of sets, ELWA managers embedded radio operation within a larger social and institutional framework. Project engineers and station officials clearly understood that humans performed certain indispensable functions in operating sets and that the technology and social context formed a "seamless web."¹⁰⁴ "Reception" in the

pre-transistor, vacuum tube missionary environment involved a jointly technical and social operation. Station managers could not afford to rely on technological devices alone, so they made the best of the situation, transforming select set borrowers into human “receivers” that carried out the function of filtering programs. In lieu of pretuned sets, human operators ensured that receivers were used “properly” and “advantageously.”

Yet reliance on social channels to convey broadcaster intent had obvious drawbacks, not least of which was human fallibility. The initial strategy of capturing listeners through social regulation, adopted by ELWA from 1954 to 1959, presumed a scarce resource environment, which mandated judicious management by broadcasters and restricted listener access to outside sources of supply. ELWA’s strategy of regulating set usage from 1954 to 1959 through borrower screening and indoctrination worked on a small scale principally because no competing stations existed on the AM dial. As stated, scarce supply maximized station leverage over set usage and reinforced the ritual status of receivers.

By 1960, however, several conditions had altered the assumptions underlying ELWA’s initial approach to socially regulating set usage in Liberia. First, reliance on social regulation severely hampered expansion efforts, since the mode of capture required more extensive interaction with limited numbers of staff personnel at the station. Second, managers of the program found it difficult in practice to control set usage by legally reclaiming radios. Third, establishment of the government broadcasting station ELBC in 1959 brought significant competition for radio listeners in Liberia, enlarging listeners’ choice of stations. Fourth, and most important, advances in transistor technology made new, low-cost receiver alternatives available.

The mechanisms put in place by ELWA managers between 1954 and 1959 to regulate set usage were relatively crude and proved inadequate in the long run for a large-scale receiver program. Reliance on commercial distribution channels proved a bottleneck that significantly constrained the growth of ELWA's program. Given the difficulties they faced and the pragmatism they demonstrated, ELWA officials proved eager to try out new solutions to the "receiver problem," developed in-house by missionary broadcasters themselves, on their home terrain. The development of a missionary transistor receiver, spearheaded by Abe Thiessen himself, occurred synchronically with the founding of ELWA. As the next two chapters will show, the station proved the ideal testing ground for a new receiver, custom designed to withstand the harsh and austere conditions of frontier mission fields. Cheap and durable, such a "missionary transistor receiver" promised to deliver a receiver for the masses at long last.

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- ¹ William Martin, *A Prophet with Honor: The Billy Graham Story* (William Morrow, 1991), 79.
- ² Joel A. Carpenter, "Propagating the Faith Once Delivered: The Fundamentalist Missionary Enterprise, 1920-1945" in Joel A. Carpenter and Wilbert R. Shenk, eds., *Earthen Vessels: American Evangelicals and Foreign Missions, 1880-1980* (Eerdmans, 1990), 111.
- ³ George Marsden, *Reforming Fundamentalism: Fuller Seminary and the New Evangelicalism* (Eerdmans, 1987) p. 8.
- ⁴ Joel A. Carpenter, "Propagating the Faith Once Delivered: The Fundamentalist Missionary Enterprise, 1920-1945" in Joel A. Carpenter and Wilbert R. Shenk, eds., *Earthen Vessels: American Evangelicals and Foreign Missions, 1880-1980* (Eerdmans, 1990), 123.
- ⁵ Paul Bechtel, *Wheaton College: A Heritage Remembered, 1860-1984* (Harold Shaw, 1984), 194, cited in Joel A. Carpenter, "Propagating the Faith Once Delivered: The Fundamentalist Missionary Enterprise, 1920-1945" in Joel A. Carpenter and Wilbert R. Shenk, eds., *Earthen Vessels: American Evangelicals and Foreign Missions, 1880-1980* (Eerdmans, 1990), 123.
- ⁶ Abe Thiessen, "The Beginnings of ELWA," Beginnings (1956-1969), Broadcasting Division, Liberia Box 14, SIM International Archives (SIM), Fort Mill, SC.
- ⁷ Alhaji G.V. Kromah, "The Utilisation of Broadcasting for National Development in Liberia," in George Wedell, ed., *Making Broadcasting Useful: The African Experience* (Manchester University, 1986).
- ⁸ Alhaji G.V. Kromah, "The Utilisation of Broadcasting for National Development in Liberia," in George Wedell, ed., *Making Broadcasting Useful: The African Experience* (Manchester University, 1986).
- ⁹ Abe Thiessen, "The Beginnings of ELWA," Abe Thiessen, "The Beginnings of ELWA," Beginnings (1956-1969), Broadcasting Division, Liberia Box 14, SIM.
- ¹⁰ Seth A. Oshatoba, *SIM/ECWA: Voices and Statistics from the Past*, 1994 (?), SIM Library and Resource Center, 73; Joel A. Carpenter, "Propagating the Faith Once Delivered: The Fundamentalist Missionary Enterprise, 1920-1945" in Joel A. Carpenter and Wilbert R. Shenk, eds., *Earthen Vessels: American Evangelicals and Foreign Missions, 1880-1980* (Eerdmans, 1990), 127.
- ¹¹ Letter from Clarence Jones to Reuben Larson, June 12, 1944, Folder 364, HCJB Archives (HCJB), Colorado Springs, CO.
- ¹² Letter from Clarence Jones to Reuben Larson, October 5, 1944, Folder 364, HCJB.
- ¹³ Letter from Clarence Jones to Reuben Larson, August 25, 1944, Folder 364, HCJB.
- ¹⁴ Letter from Clarence Jones to Reuben Larson, October 5, 1944, Folder 364, HCJB.
- ¹⁵ Letter from Clarence Jones to Reuben Larson, October 5, 1944, Folder 364, HCJB.
- ¹⁶ Walter Emery, *National and International Systems of Broadcasting: Their History, Operation, and Control* (Michigan State University, 1969), Appendix VIII-C.
- ¹⁷ "Radio Station ELWA Annual Report (1954)," Director's Annual Reports (1960-80), Broadcasting Division, Liberia Box 15, SIM.
- ¹⁸ Elizabeth Isechei, *The Religious Traditions of Africa: A History* (Praeger, 2004), 198.
- ¹⁹ J. Gus Liebenow, *Liberia: The Evolution of Privilege* (Cornell University, 1968).
- ²⁰ J. Gus Liebenow, *Liberia: The Evolution of Privilege* (Cornell University, 1968).
- ²¹ Abe Thiessen, "The Beginnings of ELWA," Abe Thiessen, "The Beginnings of ELWA," Beginnings (1956-1969), Broadcasting Division, Liberia Box 14, SIM.
- ²² By comparison, super-station WGN in Chicago employed a 50 Kw transmitter during the same period.
- ²³ "Radio Station ELWA Annual Report (1954)," Director's Annual Reports (1960-80), Broadcasting Division, Liberia Box 15, SIM; letter from Herschel Ries to Abe Thiessen, October 37 [sic], 1955, Folder 35, Box 19, Collection 86, BGCA.
- ²⁴ "First Short Wave Broadcast – March 14, 1955", 15th Anniversary (1969), Broadcasting Division, Liberia Box 14, SIM; "Review of Technical Department Activities, September 1954-1955," Correspondence (1966-1967), Audience Survey, Liberia Box 23, SIM.
- ²⁵ Letter from Herschel Ries to Abe Thiessen, July 1, 1955, Folder 35, Box 19, Collection 86, BGCA.
- ²⁶ "Review of Technical Department Activities, September 1954-1955," Correspondence (1966-1967), Audience Survey, Liberia Box 23, SIM; letter from Herschel Ries to Hank Voss and Tom Gilmer, October 28, 1955, Folder 35, Box 19, Collection 86, BGCA.
- ²⁷ These included English, French, Arabic, Bassa, Kpelle, Gola, Kru, Gio, Putu, Konobo, Tchien, Sabo, Twarbo, Vai, Belle, Mende, Maninka, Twi, Fanti, and Fula. "List of Languages Heard Over ELWA During 1955," Beginnings (1956-1969), Broadcasting Division, Liberia Box 14, SIM.

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- ²⁸ "Statistics – December 26, 1956," Statistical Reports and Correspondence (1955-1972), Audience Survey, Liberia Box 24, SIM.
- ²⁹ "Statistics – December 26, 1956," Statistical Reports and Correspondence (1955-1972), Audience Survey, Liberia Box 24, SIM.
- ³⁰ "Statistics – December 26, 1956," Statistical Reports and Correspondence (1955-1972), Audience Survey, Liberia Box 24, SIM.
- ³¹ "Statistics - November 1, 1955," Statistical Reports and Correspondence (1955-1972), Audience Survey, Liberia Box 24, SIM.
- ³² Abe Thiessen, "The Beginnings of ELWA," Abe Thiessen, "The Beginnings of ELWA," Beginnings (1956-1969), Broadcasting Division, Liberia Box 14, SIM.
- ³³ Letter from Clarence Jones to Reuben Larson, October 5, 1944, Folder 364, HCJB.
- ³⁴ David Held and Anthony McGrew, eds, *The Global Transformations Reader: An Introduction to the Globalization Debate* (Cambridge, UK: Blackwell, 2000), p. 351.
- ³⁵ Letter from Gordon Beacham to M.A. Darroch, November 26, 1953, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ³⁶ United States Information Agency, Office of Research and Intelligence, "World Wide Distribution of Radio Receiver Sets," December 31, 1957, Folder 5, Box 33, Collection 86, BGCA.
- Population estimates are based on a 1962 census figure of 1,016,443 and a projected annual population growth rate of 1.6%, figured by Liberia's Office of National Planning in 1967. Source: "Population of Liberia," Statistical Reports & Correspondence (1955-1972), Audience Survey, Liberia Box 24, SIM.
- ³⁷ T.W. Chalmers, "This is the Nigerian Broadcasting Service," from *Nigeria*, No. 40, 1953, pps. 280-296, Folder 6, Box 29, Collection 86, BGCA
- ³⁸ <http://countrystudies.us/nigeria/35.htm>, September 22, 2004.
- ³⁹ Elihu Katz and George Wedell, *Broadcasting in the Third World: Promise and Performance* (Cambridge, MA: Harvard University Press, 1977).
- ⁴⁰ T.W. Chalmers, "This is the Nigerian Broadcasting Service," from *Nigeria*, No. 40, 1953, pps. 280-296, Folder 6, Box 29, Collection 86, BGCA.
- ⁴¹ M.A. Darroch, letter to Rev. C.G. Beacham, February 5, 1954, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁴² Bill Watkins, "Distribution," Missionary Transistor Research Meeting (MTRM), May 1, 1956, Folder 12, Box 27, Collection 86, BGCA.
- ⁴³ T.W. Chalmers, "This is the Nigerian Broadcasting Service," from *Nigeria*, No. 40, 1953, pps. 280-296, Folder 6, Box 29, Collection 86, BGCA
- ⁴⁴ Elihu Katz and George Wedell, *Broadcasting in the Third World: Promise and Performance* (Cambridge, MA: Harvard University Press, 1977), p. 113.
- ⁴⁵ Letter from Abe Thiessen to J.C. Wiebe, February 20, 1957, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁴⁶ Abe Thiessen, letter to J.C. Wiebe, February 20, 1957, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁴⁷ Letter from De La Haye to Abe Thiessen, May 14, 1958, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁴⁸ M.A. Darroch, letter to Rev. C.G. Beacham, February 5, 1954, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁴⁹ Letter from De La Haye to Abe Thiessen, May 14, 1958, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM; "Radio Station ELWA Annual Report (1954)," Director's Annual Reports (1960-80), Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁵⁰ Bill Watkins, "Distribution," MTRM, Folder 12, Box 27, Collection 86, BGCA.
- ⁵¹ Bill Watkins, "Distribution," MTRM, Folder 12, Box 27, Collection 86, BGCA.
- ⁵² West African Broadcasting Association, "Receiver Loan Agreement," Lease at Old Congo Town, Important Documents, Administration, Liberia Box 5, SIM.
- ⁵³ West African Broadcasting Association, "Receiver Loan Agreement," Lease at Old Congo Town, Important Documents, Administration, Liberia Box 5, SIM.

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- ⁵⁴ Herschel Ries, letter to Abe Thiessen, October 26, 1957, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁵⁵ Bill Watkins, "Distribution," MTRM, Folder 12, Box 27, Collection 86, BGCA.
- ⁵⁶ Bill Watkins, "Distribution," MTRM, Folder 12, Box 27, Collection 86, BGCA.
- ⁵⁷ ELWA, "Radio Receiver Application Blank," undated, attached to letter from Herschel Ries to Abe Thiessen, May 14, 1958, Folder 34, Box 32, Collection 86, BGCA.
- ⁵⁸ Letter from Robert E. Bowman to Abe Thiessen, May 29, 1948, Folder 34, Box 32, Collection 86, BGCA.
- ⁵⁹ For subsequent references by officials to the "proper" and "advantageous" use of receivers, see Abe Thiessen, letter to Ray Davis, January 20, 1958, and Ray de la Haye, letter to Abe Thiessen, May 14, 1958, both in Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM; letter from Abe Thiessen, to Walter Ohman, April 10, 1959, Folder 35, Box 18, Collection 86, BGCA; letter from Abe Thiessen to Derek Porter, December 8, 1958, Folder 39, Box 32, Collection 86, BGCA; letter from Dick Reed, letter to Russell Mapes, June 9, 1965, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁶⁰ "Radio Distribution Meeting," September 9, 1960, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁶¹ Hank Voss, letter to Abe Thiessen, undated, stamped "Received July [4?] 1957," Folder 26, Box 33, Collection 86, BGCA.
- ⁶² Bill Watkins, "Distribution," MTRM, Folder 12, Box 27, Collection 86, BGCA.
- ⁶³ Bill Watkins, "Distribution," MTRM, Folder 12, Box 27, Collection 86, BGCA.
- ⁶⁴ For a sociological discussion of the ritual nature of religious activity, see Emile Durkheim, *The Elementary Forms of the Religious Life* (New York: Free Press, 1965).
- ⁶⁵ Dale Graber, "Portable Missionary Radio Project," 1958, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁶⁶ Bill Watkins, "Distribution," MTRM, Folder 12, Box 27, Collection 86, BGCA.
- ⁶⁷ Stanley R. Brookman, letter to A.G. Thiessen, April 5, 1957; James K. Sumbo, letter to ELWA, June 24, 1958; Ray de la Haye, letter to James K. Sumbo, July 1, 1958; Gordon L. Cisco, letter to Station Manager, ELWA, September 11, 1958; and Ray de la Haye, letter to Cisco to Gordon L. Cisco, September 17, 1958, all in Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM..
- ⁶⁸ "Discussion of Production Possibilities," MTRM, Folder 12, Box 27, Collection 86, BGCA.
- ⁶⁹ Letter from James K. Sumbo to ELWA, June 24, 1958 and letter from Ray de la Haye to James K. Sumbo, July 1, 1958, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁷⁰ Letter from Gordon L. Cisco to Station Manager, ELWA, September 11, 1958 and letter from Ray de la Haye to Cisco to Gordon L. Cisco, September 17, 1958, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁷¹ Letter from Henry Hungerpiller to Hank Voss, December 11, 1953, and letter from Hank Voss to Henry Hungerpiller, January 3, 1954, Folder 17, Box 33, Collection 86, BGCA.
- ⁷² Abe Thiessen, "The Mighty Mite in Missions," Folder 16, Box 33, Collection 86, BGCA.
- ⁷³ Villager promotional brochure, "Announcing "the other ½" of missionary radio," undated (prior to May 1958), Folder 32, Box 32, Collection 86, BGCA.
- ⁷⁴ Letter from R.M. Carstens, International Division, Zenith Radio Corporation, to Robert Vander Hooning, January 19, 1954, Folder 23, Box 33, Collection 86, BGCA; letter from A. Rivera, Emerson Radio and Phonograph Corporation to Robert Vander Hooning, January 6, 1954, Folder 35, Box 32, Collection 86, BGCA; letter from Walter Hardy, Hallicrafters Export Division – Philips Export Company, to Robert Vander Hooning, January 6, 1954, Folder 35, Box 32, Collection 86, BGCA; letter from Ray Schweissinger, Fitzpatrick Electric Supply Co., to Robert Vander Hooning, December 16, 1953, Folder 35, Box 32, Collection 86, BGCA; letter from F. Butterman, Special Sales Division, Philco International Corporation, to Abe Thiessen, April 13, 1954, Folder 14, Box 33, Collection 86, BGCA.
- ⁷⁵ "Discussion of Production Possibilities" and Bill Watkins, "Distribution," MTRM, Folder 12, Box 27, Collection 86, BGCA; letter from Ray de la Haye to Abe Thiessen, May 14, 1958, Missionary Radio

Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM. Bill Watkins stated that commercial receivers could be purchased in Liberia for \$14 in early 1956.

⁷⁶ Letter from Bill Robarge to Abe Thiessen, June 17, 1957, Collection 86, BGCA.

⁷⁷ T.W. Chalmers, "This is the Nigerian Broadcasting Service," from *Nigeria*, No. 40, 1953, pps. 280-296, Folder 6, Box 29, Collection 86, BGCA.

⁷⁸ Hank Voss, "ELWA-WMBI Presentation," MTRM, Folder 12, Box 27, Collection 86, BGCA.

⁷⁹ Letter from Abe Thiessen to Walter Ohman, April 10, 1959, Folder 35, Box 18, Collection 86, BGCA.

⁸⁰ "Itemized Report on Transistor Sets," undated (1955 or 1956), Folder 17, Box 32, Collection 86, BGCA.

⁸¹ Bill Watkins, "Distribution," MTRM, May 1, 1956, Folder 12, Box 27, Collection 86, BGCA.

⁸² "Itemized Report on Transistor Sets," undated (1955 or 1956), Folder 17, Box 32, Collection 86, BGCA.

⁸³ Letter from Herschel Ries to Hank Voss and Tom Gilmer, October 26, 1957, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

⁸⁴ Letter from Abe Thiessen to Ray de la Haye, October 29, 1958, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

⁸⁵ J.O. Percy to John VanderSchie, October 9, 1953, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

⁸⁶ Letter from John Wiebe to Ray de la Haye, December 3, 1956, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

⁸⁷ Letter from Abe Thiessen to Ray Davis, January 20, 1958, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

⁸⁸ Letter from Abe Thiessen to J.C. Wiebe, February 20, 1957, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

⁸⁹ Letter from Abe Thiessen to Ray Davis, January 20, 1958, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

⁹⁰ Letter from John VanderSchie to J.O. Percy, October 7, 1953, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM; letter from C.G. Beacham to Abe Thiessen, August 30, 1954, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM; letter from R.M. Carstens, International Division, Zenith Radio Corporation, to Robert Vander Hooning, January 19, 1954, Folder 23, Box 33, Collection 86, BGCA; letter from A. Rivera, Emerson Radio and Phonograph Corporation to Robert Vander Hooning, January 6, 1954, Folder 35, Box 32, Collection 86, BGCA; letter from Walter Hardy, Hallicrafters Export Division – Philips Export Company, to Robert Vander Hooning, January 6, 1954, Folder 35, Box 32, Collection 86, BGCA; letter from Ray Schweissinger, Fitzpatrick Electric Supply Co., to Robert Vander Hooning, December 16, 1953, Folder 35, Box 32, Collection 86, BGCA; letter from F. Buttermann, Special Sales Division, Philco International Corporation, to Abe Thiessen, April 13, 1954, Folder 14, Box 33, Collection 86, BGCA.

⁹¹ Nat Bercovitz, "The Design of Transistor Radio Receivers," MTRM, Folder 12, Box 27, Collection 86, BGCA.

⁹² Letter from Derek Porter to Tom Gilmer, September 4, 1958, Folder 39, Box 32, Collection 86, BGCA.

⁹³ Portable Missionary Radio Project, October 25, 1960, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

⁹⁴ Letter from Herschel Ries to Hank Voss and Tom Gilmer, October 26, 1957, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

⁹⁵ Letter from Herschel Ries to Hank Voss and Tom Gilmer, October 26, 1957, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

⁹⁶ T.W. Chalmers, "This is the Nigerian Broadcasting Service," from *Nigeria*, No. 40, 1953, pps. 280-296, Folder 6, Box 29, Collection 86, BGCA

⁹⁷ Yusufu Turaki, *An Introduction to the History of SIM/ECWA in Nigeria, 1893-1993* (Nigeria(?): Y. Turaki, 1993).

⁹⁸ Letter from Ray Davis to Abe Thiessen, January 2, 1957, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

⁹⁹ Letter from Guy W. Playfair to Abe Thiessen, June 4, 1957, Folder 35, Box 19, Collection 86, BGCA.

¹⁰⁰ Letter from Herschel Ries to Hank Voss and Tom Gilmer, October 26, 1957, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

¹⁰¹ Letter from Ray G. de la Haye, General Manager, to Hon. E. Reginald Townsend, Director, Liberian Information Service, September 29, 1960, Audience Survey (1968), Liberia Box 24, SIM.

¹⁰² Edwin Kayea, “Programming – The Station’s View,” undated, Testimonies, Audience Survey, Liberia Box 24, SIM.

¹⁰³ Pierre Bourdieu, *Distinction: A Social Critique of the Judgment of Taste* (Harvard University, 1984).

¹⁰⁴ On the notion of the “seamless web” between technology and society, see Wiebe Bijker, Thomas P. Hughes, and Trevor Pinch, eds., “Introduction” to *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology* (MIT, 1987).

Chapter 7

Developing the Missionary Transistor Receiver, 1954-56

Introduction

In December 1954, a young radio antenna engineer teaching at the Carver Bible Institute, Henry Hungerpillar, wrote to fellow radio engineer Herman (Hank) Voss at WMBI, the flagship station of the conservative evangelical Moody Bible Institute in Chicago, concerning the prospects of radio for missionary work overseas. Hungerpillar wanted to produce a radio receiver for the masses of the world's rural poor to aid in converting their souls. Citing the rapid postwar growth in missionary radio stations and transmitter facilities, Hungerpillar declared that missionary broadcasters had largely solved the "transmitting problem." The largest remaining hurdle for such stations lay in finding a long-term solution to the "receiver problem," the severe shortage of receivers in the developing world. For Hungerpillar, the heart of the receiver problem lay in power supply, since vacuum tube sets then available consumed large amounts of power.

In his reply, Voss refined Hungerpillar's analysis. In Voss's view, it was not supply *per se*, but maintenance (or upkeep) that represented the real "receiver problem," which included the cost of replacing batteries that were difficult to acquire in poor rural areas of developing countries. Voss knew that missionary broadcasters such as HCJB and FEBC had assembled limited quantities of inexpensive receivers, including crystal sets and tube radios. But he dismissed their efforts, since their success masked the true cost of servicing their sets in the field, which amounted to as much as three times the cost of production alone.¹

Unlike Hungerpillar, Voss anticipated that the long-term solution to the problem of mass producing radios for poor missionary audiences around the world lay in the new technology of the transistor. First invented by a team of physicists at Bell Laboratories in 1948 and currently undergoing rapid commercial development, the transistor, Voss argued, could cut the power needs of receivers by 80-90% once prices inevitably dropped. Anticipating the future importance of the transistor radio for the mission field, Voss wrote prophetically in 1954: “Out of this vast program and mass production should come something very good for missionary radio.”²

The two men chose different, but eventually converging paths to realize their shared dream of evangelizing the world by radio. Over the next five years, Voss teamed up with Abe Thiessen, recently returned from Liberia, organizing an ambitious attempt to custom design an inexpensive transistor receiver for use in the mission field. This chapter tells the story of what became known as their Transistor Radio Research Committee. Hungerpillar, for his part, joined the technical staff of Station ELWA. ELWA officials eagerly agreed to act as the primary field laboratory for the experimental missionary transistor sets designed by Voss and Thiessen’s committee.

Hungerpillar and Voss were certainly not the first missionaries to think about using receiver technology on a mass scale to advance the gospel abroad. Missionary broadcasters inveterately turned to technology as their solution to the “receiving problem” in the developing world. As chapter 4 showed, conservative evangelical missionaries such as Clarence Jones had investigated the possibility of mass producing a receiver for the masses immediately following WWII. Problems of organizing production, combined with the practical difficulties of supplying tube sets with regular batteries (as

shown by ELWA's experience in Liberia), effectively killed such attempts prior to the invention of the transistor. The following two chapters recount the attempt by conservative evangelical missionary broadcasters and engineers to realize Jones's goal of supplying a mass receiver through the use of transistor technology. The current chapter documents the first half of the missionary transistor receiver project's history from 1954 to 1956. It traces the genealogy of the missionary transistor receiver through three stages: from its origins in the experience of Abe Thiessen, through the first design prototype and initial field testing in Liberia to the Missionary Transistor Research Meeting, which proved an important milestone in the project. The next chapter will chart the production of the receiver itself.

The missionary transistor receiver project knit together three main groups of conservative evangelical actors: project managers and engineers in Chicago, ELWA station officials in Monrovia, and SIM officials headquartered in Nigeria. The chapter traces the complex overlappings and tensions created by the effort to solve the decades-old problem of inadequate reception facilities in the developing world through joint development of transistor technology. By billing their new missionary receiver as an evangelistic tool that would ambitiously provide "a radio for every village" (the project's motto), project organizers hoped to build wide conservative evangelical support for their project. By the spring of 1956, organizers succeeded in mobilizing a considerable segment of the missionary broadcasting community behind them, creating agreement around the use of transistor technology as the solution to the world receiver problem. What follows is then not only an account of technological development, but also a history of institutional consensus building.

The analysis serves two broad hermeneutic and historiographic purposes. First, it demonstrates in a detailed and yet dramatic way the “turn to technology” in missionary broadcasting circles that accompanied the invention of the transistor. As the previous chapter illustrated, the use of vacuum-tube receivers presented an apparently insuperable obstacle to the spread of the gospel world-wide by radio. The regime of “social regulation” described there was only a limited success and relied on radio scarcity as its *modus vivendi*. Missionary broadcasters and engineers evinced considerable faith that the transistor constituted a divine provision to expand radio distribution and reach the world’s lost for Christ – a provision that nonetheless required active agency and extensive participation on their part. The argument below demonstrates the considerable drive, determination, skill, and technical imagination with which conservative evangelicals concerned with missions tackled the receiver problem, responding to what they believed to be God’s calling and initiative.

Project organizers articulated a clear vision of a distinct radio receiver with a demanding set of specifications, uniquely fit to meet the needs of missionaries in the field. They undertook to produce a missionary transistor receiver not from a sense of widespread or latent consumer demand, but in direct response to a set of perceived needs among a range of missionary users that were not being met by private industry. A missionary transistor receiver had to combine the following qualities (not necessarily in order of importance): low-cost, efficient power consumption (transistorized), AM and short-wave reception, pretuning, portable (battery-powered), very good sensitivity, high audio output for “outdoor group listening,” “tropicalization” (weatherproofing) and high physical durability, easy assembly, and simple maintenance (reliability). Missionary

engineers who worked on the project concluded during the first three years that world radio manufacturers, particularly those in the United States, would not make a receiver with these collective characteristics commercially available at an affordable price for a considerable length of time.

As we shall see, missionary agencies, missionary broadcasters and project organizers had divided ambitions and varied strategies about how to provide radio receivers in the developing world. While project organizers expressed initial optimism that they could mass produce enough receivers to provide “a radio for every village,” it became increasingly clear that they intended to do so not by placing the receiver directly in the hands of the villager, but by putting it under the watchful control of a small body of missionary users. In short, key project personnel were not envisioning indigenous listeners *per se*, but missionaries (and their related organizations) as end users of the new receiver. This approach to radio distribution did not meet with unanimous approval and sparked spirited disagreement from high-level missionary officials affiliated with SIM who were responsible for the project.

What follows will also, secondarily, add a new dimension to the historiography of the transistor radio. A definitive history of the transistor radio in the United States remains to be written.³ Scholarly accounts of the transistor radio in broader accounts of post-WWII United States associate the device’s history in America with consumer freedom, teenage counter-culture, and rock and roll.⁴ While scholars have presented the story of Sony’s invention of the transistor radio in Japan and have analyzed the global diffusion of semiconductor technology, little discussion exists of how the new receiver spread around the world or how it was used in non-industrialized settings.⁵ In the absence

of a mature global radio market, non-commercial forces such as missionary groups played a large role in the diffusion of transistor receivers in many parts of the developing world during the period 1954 to 1970. This chapter begins to tell the story of this complex process – to be completed in the two chapters to follow.

Organizers of the missionary receiver project employed the same transistor technology as their counterparts in consumer electronics firms, but inscribed widely different listening habits into distinct technical designs in order to accomplish a vastly different social purpose. Whereas American radio manufacturers designed and marketed transistor radios to American consumers beginning in 1954, promoting a lifestyle defined by mobility, miniaturization, privacy, and personalized listening, missionary engineers and broadcasters valued the power efficiency of the transistor and generally promoted fixed placement, communal usage, and public listening of transistor radios for their users in the missionary setting. In the missionary environment, transistor radios functioned not as implements of cultural liberation, but as devices of “capture,” or regulated usage. The marked contrast between consumer and missionary applications of transistor technology suggests that the development of the transistor radio around the world during the period 1954 to 1970 was not “path dependent,” but followed assorted trajectories in different environments.⁶

The Origins of the Missionary Transistor Receiver Project

The idea of an inexpensive transistor radio for mass distribution in the mission field originated largely with Abe Thiessen, the co-founder of ELWA and the future director of the missionary transistor receiver project. Thiessen conceived of the scheme during an airplane trip to a mission station in Liberia in 1954, during which he surveyed the Liberian bush from the air. As he described the experience, Thiessen felt a “cold, heavy weight” on his heart as he tried to count up the “eternally lost” multitudes in the remote villages below who faced eternal perdition for lack of missionary personnel. Thiessen noted what he considered a tragic irony. Rural villagers such as the ones he flew over breathed air “saturated with the gospel message” in their own languages, thanks to the global postwar expansion of missionary radio stations like ELWA. Yet, Thiessen noted tragically, without receivers, the villagers remained completely oblivious to the programs which they could not hear and which penetrated the atmosphere around them. Struck with an overwhelming sense of evangelistic burden, Thiessen prayed: “O God, if these people will never have a missionary, surely they can have a radio so that they too may know that Jesus saves from sin.” According to Thiessen, God’s answer to prayer apparently came on the spot in the form of a long-term plan: “It was there that God gave the vision of a soul-saving ministry through pre-tuned radios in the thousands of unreached villages upon the mission fields of the world.”⁷

Thiessen’s airplane vision contained in seed form several essential elements of the transistor missionary project. First, Thiessen felt that missionary broadcasters, who had built transmitter platforms overseas had a strong moral and spiritual responsibility to “give voice” to the gospel message and to “make” the heathen masses hear it by

providing receivers as well. Second, he believed that he personally possessed a direct, divinely given mandate to build inexpensive radios for the masses, which derived from his vision and from the gospel unction to save souls. Third, in Thiessen's view, technology would compensate for a shortage of Western missionaries in the field, particularly in remote areas where the number of Westerners simply could not keep pace with the growth of world population. Fourth, as a by-product of Thiessen's vision, the missionary receiver project originally targeted the rural poor in developing countries for radio evangelism – audiences largely overlooked by distributors of commercial sets. Indeed, the project's motto soon became an ambitious call for action: "A radio for every village." Fifth, Thiessen recognized as early as 1954 that the principal challenge for radios operating in "primitive regions" was power consumption and that batteries posed a variety of technical and logistical problems for missionary broadcasters, as discussed in the previous chapter. Sixth, and finally, Thiessen strongly favored the use of pretuned radios. Referring to HCJB's Radio Circle, which had universally adopted fixed circuits on its receivers by 1950, Thiessen understood that the idea of pretuning missionary receivers was not new, but that the principal obstacle to its adoption on a mass scale lay in the "high battery cost problem."⁸

In early 1954, shortly after launching Station ELWA in Liberia, Thiessen returned to the Chicago area to head up ELWA's domestic fund-raising and publicity efforts as the station's official Home Agent and Deputation Secretary. The site of two leading conservative evangelical institutions, Moody Bible Institute and Wheaton College, Chicago would prove a critical locale for organizing the new transistor receiver project. By the mid-1930s, Moody Bible Institute had become widely known in conservative

evangelical circles as the “West Point of Christian Service” due to the number of the school’s programs and the sheer size of its ministries.⁹ Moody trained large numbers of missionaries and radio engineers and boasted its own missionary technical department and monthly amateur radio publication. Beginning in 1926, Station WMBI on AM 1080, the Institute’s flagship station, had pioneered the use of religion in broadcasting, featuring the voice of the prominent radio evangelist Paul Rader, discussed at length in chapter 2 as Clarence Jones’s mentor and the “grandfather” of missionary radio.¹⁰ As suggested in chapter 6, Wheaton College (where ELWA originated) became a conservative evangelical hub in part by virtue of its associations with Moody; ties between “Wheaton and the Chicago-area fundamentalist network, including the missions-training giant, the Moody Bible Institute, were old and well-established.”¹¹ WMBI’s transmitters on Mill Road in Addison, Illinois were located just over 10 miles from Wheaton’s campus.

A conservative evangelical stronghold, the city of Chicago would play a crucial role in the new missionary receiver project by bringing together geographically the resources of the conservative evangelical community and those of the consumer electronics industry. In April 1952, the magazine *Christian Life* billed Chicago as “the evangelical capital of the U.S.A.” due to the one hundred different agencies located in the city, including “mission boards, denominational offices, colleges, Bible institutes, seminaries, publishing concerns..., and youth organizations.” Thanks in large part to the presence of powerful institutions like Moody and Wheaton, Chicago represented “a regional evangelical stronghold” in the 1950s during a period when evangelicalism as a movement was undergoing popular nation-wide revival.¹² At the same time, Chicago also served as a major regional center for the consumer electronics industry in the mid 1950s.

In a study conducted by Thiessen in mid-1957 of the nearly thirty major American radio manufacturers, nearly half were located in the Chicago or Midwest area.¹³

The transistor missionary radio project grew out of the coordination of Thiessen's vision with the efforts of radio engineers at WMBI in Chicago. Hank J. Voss and Tom Gilmer, engineers with WMBI, shared Thiessen's urge to use transistor technology as a missionary tool to reach unevangelized world populations. Voss and Gilmer, known familiarly as the "WMBI boys," had first learned to appreciate the critical importance of receivers for broadcasting through WMBI's experiments with FM during WWII. Anticipating Thiessen's vision, Voss and Gilmer had begun praying and working on a receiver for the mission field on their own, beginning in late 1952.¹⁴ Voss' interest in the subject led to his correspondence with Henry Hungerpillar in late 1953, discussed at the start of the chapter.

Contact between Thiessen and WMBI engineers in the Chicago area led to the genesis of a transistor missionary receiver project. As discussed in chapter 6, ELWA's American roots lay in the Chicago area with Wheaton College. A close relationship developed between personnel at ELWA (originally from Wheaton) and WMBI, in part as a product of WMBI's proximity to the college town. By December 1953, the "WMBI boys" had become technical consultants to ELWA.¹⁵ Thiessen shared his vision for missionary radio with engineers at WMBI in early 1954 after returning to Chicago.¹⁶ The three men quickly agreed to act in concert, forming the core group of the missionary transistor receiver project. While Voss and Gilmer worked on technical development, Thiessen focused on fund-raising and publicity for the new effort, working loosely under the umbrella of ELWA's parent, SIM.

Developing a Field Prototype, January 1954 - December 1955

The first two years of the project from January 1954 to December 1955 were dominated by intensive development activity and field testing in order to design a production prototype of a missionary transistor receiver.

Robert Vander Hooning, a wealthy businessman from Holland, Michigan played a prominent role in the early history of the transistor missionary receiver project as a primary funding sponsor. General Manager of Vans Foods Department Stores, Vander Hooning had an intense interest in Protestant missions and in “getting the Gospel out by the air in the foreign fields.” Following the progress of HCJB, Vander Hooning wanted to get large numbers of receivers into Africa.¹⁷ In early October 1953, Vander Hooning came into contact with SIM through John VanderSchie, a local pastor and supporter of the mission agency, when VanderSchie preached in Vander Hooning’s hometown. Vander Hooning offered to subsidize receiver distribution through the missionary agency, agreeing eventually to finance 10,000 receivers in West Africa.¹⁸

Vander Hooning made an active effort to locate receivers on SIM’s behalf. In December 1953, he contacted numerous American radio manufacturers, including Hallicrafters, Emerson, General Electric International, Arvin, Zenith, and Philco, in order to procure commercial sets for distribution in Liberia and Nigeria. Companies informed Vander Hooning that portable inexpensive tube-based, battery-powered sets in both the standard AM broadcast and short-wave bands were available, priced as low as \$15-\$25.¹⁹ The inability of these American commercial sets to meet the distinct demands of the mission field, however, blocked Vander Hooning’s further efforts. The GE sales representative informed him that the company no longer manufactured “farm set

receivers,” that is “single band battery only radio receivers,” which had become comparatively rare in the United States.²⁰ More importantly, the major commercial firms contacted could not provide pretuned sets.

Tensions between Thiessen as the primary manager of the receiver project and SIM officials in Nigeria over the receiver program appeared immediately. In the winter of 1954, Gordon Beacham, a SIM executive and ELWA’s interim station manager, cabled an order for 500 Philips sets to be paid for by Vander Hooning. Acting as ELWA’s home agent, Thiessen attempted to persuade Vander Hooning during a meeting in March 1954 that “there wouldn’t be any use” for the sets ordered by the station, which would not work in the mission field due to battery problems.²¹ By early June 1954, Voss had developed a first pilot model of an experimental broadcast-band receiver using four transistors. Hoping to obtain research funds, Thiessen demonstrated the test set to Vander Hooning during a subsequent visit to Holland with Voss in June.²²

Thiessen, SIM officials, ELWA, and Vander Hooning eventually brokered an implicit compromise over radio receivers. By August 1954, ELWA had received a lot of 100 commercial vacuum-tube receivers financed by Vander Hooning – the only sets he would end up financing for the station. ELWA, in turn, agreed to act as the major testing site for experimental sets developed by Thiessen’s transistor project in the hope of a large production run of transistor radios to follow. Vander Hooning, finally, offered to fund production costs for the new missionary transistor receiver.

Development of set prototypes took up the first nine months of 1955. In all, Voss and Gilmer built and tested five experimental AM transistor sets between January and October 1955, which they labeled Models 1MR710, 2MR710, 3MR710, 4MR710, and

5MR710. The five transistor sets all employed fixed circuits (pretuning), although the last four employed a different pretuning technique (see below). Of the five experimental models produced by the project, four made it to the field in Liberia, where ELWA technical staff performed the major field testing, beginning in January 1955. ELWA technicians measured several performance criteria: receiver sensitivity (the ability to detect field signals, particularly with distance), selectivity and “drift” (the set’s ability to differentiate wavelengths, particularly stations close together on the radio dial, and stay on frequency), and power output (an important parameter for group audiences, determined by the size and number of transistor amplifiers as well as speaker size).

In addition to ELWA and WMBI in Chicago, the WMBI boys sent experimental transistor sets to a total of seven missionary broadcasters: HCJB, DZAS (FEBC - Philippines) CP-27 (Bolivia), HOXO (Panama), and TGNA (Guatemala), all located between 680-760 MHz on the AM broadcast band dial.²³ Stations kept experimental sets and conducted tests on a continual basis on the project’s first broadcast-band prototypes over two and a half years, beginning in early 1955 through mid-1957.

Field testing performed several critical functions for the fledgling receiver project. First, data obtained under conditions in the field gave project engineers in Chicago critical feedback and led to substantial changes in design. Second, field tests provided missionary stations around the world with valuable, first-hand exposure to new transistor technology, accelerating their wholesale adoption of the new receivers. Third, field tests performed an important rhetorical function for the project. Promotional reports that appeared in *Foreign Missionary Radio*, the trade journal of missionary radio, publicized the project, specifying that it had met “rigorous laboratory and field tests in Africa and

the United States.”²⁴ By verifying the performance capabilities of the new radios, field results widely read in such accounts helped to allay anxiety among the conservative evangelical public about funding an untried, experimental technique and helped to persuade missionary users, such as mission agencies, stations, and individual missionaries, to purchase the sets.

Field tests of early broadcast-band sets proved a challenge for station workers and often gave only parochial results. To provide valuable data, testing required long, tedious hours of listening under a variety of reception conditions. Due to the difficulty and cost of travel in Liberia and a chronic shortage of technical workers, a handful of ELWA station workers performed a limited numbers of tests mostly in the greater Monrovia area, utilizing ELWA’s long-wave service. Sets were rarely taken into the Liberian bush. Not all test sets even made it to Africa. Project personnel, including Thiessen and A.P. Frye (WMBI’s chief engineer) performed testing duties themselves in the Midwest. Thiessen, for example, tested sets in Minneapolis, where he picked up the signal of Chicago’s superstation WGN some 400 miles away.²⁵

Despite their limitations, field tests provided WMBI engineers with critical experimental data on reception conditions overseas. Herschel Ries, ELWA’s technical director, conducted the project’s first field tests in Liberia between January and February 1955, using the first experimental set, Model 1MR710. Ries noted that the first pilot transistor set was already “good” on battery consumption. The set used four “flashlight cells” because they would be available in any major town and could run for 500 hours on a low voltage of 6 volts.²⁶ Unlike portable radio users in the United States, ELWA staff did not consider the weight and size of the radio as important design factors in the new

missionary receiver. The term “portable” in the missionary context connoted battery-powered rather than transportable *per se*. Ries in fact recommended *not* miniaturizing radio components along with the transistor, since such items were unnecessary and more expensive: there is “no need for small transistor components as size is no problem.” ELWA technicians actually counseled enlarging the set’s cabinet size in future models order to “improve audio quality.”²⁷ ELWA technical personnel had experienced two types of early problems with the Philips superhet tube sets; IF (intermediate frequency) transformers burned out in roughly half the sets, requiring repairmen to recall the sets and rewind the coils in the station’s shop, while batteries could be forced in the wrong way, burning out the set’s tube filaments.²⁸ Despite problems with Philips tube sets, Ries condoned the use of “regular cheap transformers” in transistor sets because the sets’ lower voltage eliminated the danger of burn-out and because sets did not need small parts.²⁹ Station technicians endorsed the use of printed circuits, with wiring and resistors painted on the chassis board, and suggested not miniaturizing the set’s wiring in order to facilitate servicing by national personnel.³⁰

Field tests provided engineers in Chicago with crucial data on tropical conditions. Transistors initially held up well in Liberia’s environment, though by early 1957 test users complained of leaks since the old transistors were not hermetically sealed.³¹ To avoid moisture problems, set cabinets were made from inexpensive plastic lunchboxes and aluminum (instead of steel) parts, earning the appellation “lunch box transistor sets.”³² Batteries needed a holder that was both non-corrosive, since batteries frequently went bad and leaked in Liberia, and fool-proof in terms of polarity, since cells placed the wrong way in sets could short circuit receivers (as demonstrated in earlier Philips sets).³³

Field tests on broadcast-band “lunchbox sets” confirmed continual problems with the design of the battery holder. Stanley Brookman, a technical manager at ELWA, noted several problems with the battery holders in the five “710”’s (TRF’s). The series connecting wires had broken in test sets or had not been soldered properly. Gilmer and Voss had also not anticipated differences in batteries consumed overseas. Since Ever Ready batteries, the type most commonly used in the Liberian field were slightly smaller than their American counterparts, the negative end of the battery would not make contact with the rivet in the battery holder. Station workers had to fill hole with solder in order to make contact.³⁴ Philip T. Smith of the Panamanian station HOXO, “The Voice of the Isthmus,” tested a sample broadcast-band TRF set and complained similarly that batteries made “intermittent connections” and that, consequently, not all flashlight batteries could be used.³⁵

After tests with the first experimental set in early 1955, Ries concluded that it posed major practical tuning difficulties for the mission field. Model 1MR710 employed a “superhet” design and provided pretuned reception by fixing the capacitance of the radio’s tuning circuit (or “tank circuit”). Employing a regenerative circuit as a detector, the set required operators to use two tuning controls that had to be “worked against each other” in order to locate the correct frequency. Ries felt the twin tuning controls on Model 1MR710 were “too difficult for these people” and “even for us becomes tricky at times.” Ries concluded that “tuning would be an impossibility” to a Liberian and therefore had to be simplified. Ries also pointed out difficulties with pretuning early sets on long-wave. The inevitable movement of portable receivers had a sizeable impact on fixed reception. Sets could not remain completely stationary in the mission field, since

they had to be pulled in and out of storage daily and the antenna adjusted, causing a slightly different tuning. Based on his experience with the first test model, Ries concluded direly that “pre-tuning will not work.”

Ries suggested three technical solutions to simplify tuning operations and enhance reception on future experimental sets. First, sets should be pretuned to the station’s approximate frequency and come with only two knobs for Liberians to operate, a volume control and a trimmer for fine adjustment. Pretuning would thus make sets easier for nationals to operate by eliminating unneeded dials, while the trimmer could adjust for minor set movement. Second, sets should employ slug tuning instead of capacitor (or tank-circuit) tuning. This would allow technicians to adjust sets far more easily in the field by simply turning metal slugs in the radio’s tuning coil rather than swapping out capacitors to alter the set’s “tank” circuit. Thirdly, future sets should differentiate between the “radio frequency and the detection part of the set,” separating the antenna and tuning coils, in order to provide better adjustment for changes in reception condition.³⁶

WMBI engineers adopted all three tuning recommendations made by Ries, beginning with the Model 2MR710. Voss and Gilmer reduced the number of dials on the receiver, adopted slug tuning, and added an extra transistor to the set’s RF (radio frequency) section, thereby separating the receiver’s detection and tuning functions. The resulting distinct “Missionary Radio R.F. section” employed custom-designed RF coils and transformers, coupled to a ferrite rod antenna, and could be “pretuned to any frequency between 690 and 740 K.C. by a small ferrite slug tuned series coil.” Ironically,

it was the custom adaptation of a conventional radio technology (coils and transformers), rather than the novel use of transistors *per se*, that made the set special in Ries' view.³⁷

Voss and Gilmer made two further substantial modifications to the Model 1MR710. Following Ries' results, Voss and Gilmer abandoned the use of superhet circuits on all subsequent test sets. They also added a transistor to the audio section of the receiver to give the set more volume. In all, the experimental set now contained six transistors rather than the original four – two in the RF section and four in the audio section.

Use of a tuned radio frequency ("TRF") set formed the "backbone" of design thinking on the missionary transistor receiver during the remainder of the project's initial period.³⁸ By 1954, commercial radio manufacturers in the United States and in Europe had almost universally adopted a "superheterodyne" design on their sets for nearly three decades because of its superior technical performance. "Superhet" receivers, such the Philips tube models distributed by ELWA's PMR department, used oscillating circuits to filter and then "beat back" incoming signals, enhancing the set's audio volume and fidelity over a range of radio frequencies. Compared to superhets, TRF sets were far cheaper to build, but operated within a narrow range of AM frequencies. A TRF set could be more sensitive than a superhet in the broadcast band because it provided an amplifier in the first stage in the 690-740 MHz range, rather than a converter (filter).³⁹

WMBI engineers designed the subsequent four experimental sets sent to Liberia with a tuned radio frequency instead of an oscillator ("superheterodyne") to detect signals. Voss and Gilmer opted for TRF design in order to simplify the process of pretuning and produce a cheaper and more sensitive broadcast-band set.⁴⁰ Since the seven missionary

radio stations that acted as test sites all happened to operate on frequencies in the range of 680-760 KHz,⁴¹ Voss and Gilmer could design the first receivers with TRF (as opposed to superhet) technology, reducing costs.⁴² Experimental TRF sets in Liberia, pretuned to ELWA's 710 KHz service, had proven so popular with the station that Bill Watkins wanted to ensure a continuous, long-term supply of the inexpensive sets. Outside the limited broadcast band, however, TRF sets offered far less sensitivity and station selectivity than their superhet counterparts. TRF design was not even a viable option in the high-frequency, or short-wave, portion of the radio spectrum.

Field tests conducted by ELWA showed that the audio output, sensitivity, and selectivity on experimental TRF sets needed considerable improvement. Test sets from this early period suffered from blaring and distortion at the high volume levels needed for group audiences, oscillating when "peaked up."⁴³ Set sensitivity proved a major area for improvement. While the first test possessed adequate power and signal strength within the range of ELWA's 710 KHz transmitter in March 1955, roughly 15-20 miles from the station, thereby reaching Monrovia and its environs, sensitivity dropped off significantly with distance, limiting the station's ability to expand into the Liberian hinterland on short-wave.⁴⁴ Tests on subsequent models confirmed a range of 17-20 miles, but were barely audible at 34 miles.⁴⁵ Thus, while sets were usable at close range to the station, they would need improvements "for mass distribution in distant parts."⁴⁶ Since no other stations broadcast on long-wave in Liberia or nearby, selectivity for the AM set could be quite broad for the present. Short-wave service, however, presented major difficulties for the future, since transmitters in other countries where ELWA broadcast were more numerous; in Lagos, Nigeria, for example, a station broadcast on 4.8 MHz.⁴⁷ Feedback

from Station HOXO, a missionary user in Panama, indicated poor sensitivity and selectivity on early TRF experimental models. Reception proved satisfactory only a mere ½ mile from the transmitter, while the set in question failed to completely tune out neighboring stations on the band – a particular problem for HOXO since, at only 500 watts, it sat sandwiched between two powerful AM stations which came in on top of it.⁴⁸

Despite the major tuning modifications implemented by Voss and Gilmer at Ries' request, the need to constantly retune subsequent models caused a major inconvenience in the field. During tests conducted in the fall of 1955 on Model 3MR710, Ries noted the need to frequently retune the set as he traveled from the station and its signal weakened. Thiessen observed the same phenomenon at home. When testing Model 4MR710 in the fall of 1955, he had to retune the set's coil frequently, which Thiessen did easily by turning the set's slug slightly.⁴⁹ A test conducted by ELWA staff in Liberia April 1956 found that sets were good up to 10 miles, but needed retuning at 20 miles.

Investigating Large-Scale Production, April - December 1955

As field testing moved forward, Thiessen felt mounting pressure to maintain financial support, mobilize institutional backing, and move toward large-scale receiver production. By late May 1955, Voss and Gilmer had set up “a real array of research equipment” and had spent many hours on development work, including a two-week stretch when they both worked full-time on the project.⁵⁰ During the summer of 1955, funding worries led Thiessen to push Voss and Gilmer in their labors. Thiessen became increasingly anxious to “cash in” on Vander Hooning's money before he took it elsewhere.⁵¹ By late July, Vander Hooning had offered up to \$400,000 for production

costs of a new receiver, but was growing “quite impatient” with the slow pace of the project. Eager to “strike while this iron is hot,” Thiessen pressured Voss and Gilmer to put every bit of energy into developing a production prototype, including hiring a full-time researcher for six weeks.⁵²

Funding pressures led to increased tensions not only with Voss and Gilmer, but with Herschel Ries in the field as well. In August 1955, Thiessen pushed Ries to wrap up the testing process, “we are pushing this thing so that we don’t lose our friend in Holland, Michigan.”⁵³ Ries responded cautiously, defending the need for extended fieldwork to work out bugs and counseling gradual product development. Experience with recent bugs in the transformers of Philips sets made Ries wary that ELWA would “get stuck with an imperfect set” if they rushed for Vander Hooning’s money. Ries preferred “to wait for the perfected set” and “trust the Lord for the money later on.”⁵⁴ Rather than pushing to mass produce receivers, Ries suggested a pilot run of 100 sets, followed by further field tests, before a major production launch.⁵⁵ Thiessen protested, but in the end accepted Ries’ recommendation, indicating his reliance on field support for test data and set distribution. Thiessen wrote to Vander Hooning in late October 1955, asking him to fund a pilot run of 100 sets at the cost of \$30 a set, which Thiessen stated the WMBI boys were ready to begin.⁵⁶ Thiessen optimistically anticipated producing 10,000 sets once ELWA field staff satisfactorily tested the pilot models.⁵⁷

Before searching for a manufacturer, Thiessen looked to secure his institutional base. By October 1955, after nine months of testing five design prototypes world-wide, Thiessen, Gilmer, Voss, and Ries had settled on the specifications for a basic, broadcast-band missionary transistor receiver. In order to gain endorsement of the project, Thiessen

circulated an eight-page document to some two dozen engineers and missionary broadcasters around the world, which summarizing the field results and included a set of design specs. Thiessen called for a collaborative response among missionary broadcasters around the project's proposed receiver design, arguing that "substantial agreement" would facilitate the "mutual advantage of realizing M.R. objectives" and result in the "proper solution to the receiver problem." To enlist the participation of the report's recipients, Thiessen openly elicited feedback on the receiver's design specifications.⁵⁸

Rather than marking a major departure, the missionary receiver sketched by Thiessen in the document drew heavily on industry experience, which Thiessen hoped to shape to meet the special needs of missionary users. As the sketch presented by Thiessen in the report's specs made clear, what distinguished the missionary AM receiver was not its innovative design, but its peculiar combination of fairly prosaic technical attributes: "very good sensitivity, little drift, adequate volume, audio quality, and selectivity," low voltage, moderate but not excessive weatherproofing ("tropicalization"), use of a printed circuit, and simple maintenance. Using such standard "off-the-shelf" technology meant, above all, that organizers could produce such AM receivers at low cost; Thiessen cited the figure of \$25 per set. In order to capitalize on the design experience gained with commercial AM sets and to minimize the yet unexplored complexities involved in developing a high-frequency transistor receiver, Thiessen argued for developing a broadcast-band transistor receiver first before proceeding to a short-wave set. Thiessen considered actually adapting commercially produced radios in order to "take advantage of simplifications and improvements possible with the M.R. application," such as fixed

tuning, which he considered a technical advantage at this point because it dramatically simplified tuning mechanics.⁵⁹

In the fall of 1955, Thiessen and Voss began to search for a large-scale manufacturer for the missionary transistor receiver. The two men began by investigating large semiconductor and consumer electronics firms. Executives and engineers with major American semiconductor and electronics manufacturers investigated the possibility of mass producing a high volume of cheap radios for the missionary market field. Thiessen's and Voss's project appears to have briefly interested executives of these major firms due to the prospect of business opportunities, religious ties, and charitable interest. Company managers supported the project in several practical ways by providing materials, expert advice, and test facilities. Gilmer and Voss obtained free transistor samples from Raytheon, an established valve manufacturer and early leader of the transistor market, to augment the number of the semiconductor components in its later test models.⁶⁰ General Electric also provided Thiessen with free sample 2N76 transistors.⁶¹

Contacts with Motorola, established partly through religious connections, looked the most promising for organizers of the missionary receiver project in the spring of 1955. In April, Thiessen, Voss, and Gilmer met with six representatives from Motorola, including several engineers, in preparation for a Motorola proposal to produce a "large quantity of sets for distribution" by missionary users. Voss and Gilmer demonstrated an experimental model and impressed the Motorola people, leading Thiessen to claim boastfully "we have beat them to the draw by a good many months as far as development is concerned." Motorola executives expressed strong support for the project and

considered providing work on a pro bono basis. The company requested specs from Thiessen on the performance of Philips sets in the Liberian field and in May expressed the intention to set a man to work on the project full-time.⁶²

The conservative evangelical community provided Thiessen and Voss with valuable corporate contacts in the fall of 1955. Jim Vaus and Robert Luckey of Missionary Communication Services (MCS), a world-wide supplier of communication equipment for missionaries, expressed strong interest in the missionary receiver project and provided important contacts with electronics firms and set makers Raytheon, RCA, Admiral Radio Corporation, Philco, and GE.⁶³ Through Vaus, Thiessen met with a Vice President at Raytheon who was a member of the Plymouth Brethren, a conservative Protestant group, and made plans to submit specs to the company's engineers following the successful completion of pilot model field tests.⁶⁴ In August 1955, Voss and Gilmer met with a Raytheon VP in charge of manufacturing in Chicago, who expressed definite interest in the project and provided free transformers.⁶⁵ In December, Raytheon provided facilities for lab testing of transistors and transformers, resulting in component improvements.⁶⁶ J.R. Neubauer, an engineer at RCA, expressed his strong support for the project, offering to assist Thiessen in developing manufacturing specifications.⁶⁷

The outcome of Thiessen and Voss's negotiations with major electronics firms by the end of 1955 made it clear that it would not be economically possible to mass produce a missionary transistor receiver, even on the standard AM band. A meeting with Motorola early on produced a disappointing outcome: the company could only produce an order of 10,000 sets for \$40 apiece.⁶⁸ Talks with Raytheon eventually floundered along the same lines when the company indicated they could not produce a missionary

receiver for under \$42.00. While Neubauer appeared confident that RCA could develop a radio unit to meet the requirements of the missionary in the field, no bid ever apparently materialized.⁶⁹ Thus, as of the end of 1955, the high cost of receivers capable of meeting the particular demands of missionary users foreclosed the possibility of mass production of a missionary transistor receiver by established American electronics companies or radio manufacturers. If project managers were to produce large quantities of missionary receivers, they would have to organize their own manufacturing option.

Although unable to land a production contract with a major electronics manufacturer, Thiessen, Gilmer, and Voss had brought the missionary transistor receiver project a long way over two years. By the end of 1955, after two years of development work coordinated with the field, they possessed a viable production prototype with detailed design specifications that had passed the test of limited field testing and attracted at least the passing attention of major firms in the consumer electronics fields.

The first two years of the project, however, had also revealed significant fault lines in the project, which portended ill. Of particular concern were tensions which surfaced early between project organizers in Chicago, station workers in Liberia, and SIM personnel in New York and Nigeria. The three groups of actors bore complicated relations of personal and institutional inter-dependence with each other, since Thiessen served as ELWA's Home Agent and ELWA came under SIM's organizational jurisdiction. In confronting the receiver problem in Liberia, ELWA officials desperately needed inexpensive sets to distribute to low-income groups; the commercial tube radios on which they had relied consumed so much battery power that they were almost useless. SIM officials were eager to supply a large radio market in Nigeria with receivers and felt

moral pressure to utilize sets tuned only to their station (despite the political complications), which they could not obtain commercially. Station and mission officials in West Africa, in turn, provided Thiessen, Voss, and Gilmer with several critical resources in their quest to find an inexpensive solution to the receiver problem drawing on new transistor technology: test data, a distribution network, and much-needed institutional credibility.

Whatever the practical difficulties it may have posed, the rhetoric of pretuning united SIM officials in Nigeria, station workers in Liberia, and project personnel in Chicago on common conservative evangelical ground against a heathen African “other.” Engineers and managers twisted together strands of racial and technological arguments to rationalize the need for pretuned reception in the African mission field. First, ELWA staff such as Ries assumed the technical inability of native Liberians to properly tune receivers, as shown, necessitating the adoption of fixed tuning controls. Second, Thiessen, Voss, and others working on the transistor project frequently justified pretuning receivers not on cultural, but on purely technical grounds. Writing to missionary broadcasters and engineers in October 1955, Thiessen recommended pretuning for design reasons because of the “relatively simple requirements” of a fixed tuned receiver which had to tune a single wavelength, as opposed to a commercial one “which must tune a whole band of frequencies.” Thiessen considered that the “M.R. [Missionary Radio] application” therefore represented not only a cultural improvement, but an engineering advance as well, since “simplifications and improvements” would technically enhance commercial models.⁷⁰ Neubauer at RCA also recommended fixed tuning on economic

grounds; “producing units to cover limited frequency ranges” resulted in “considerable reduction in cost.”⁷¹

Coalescing Support: the Missionary Transistor Research Meeting, April 30 - May 1, 1956

In April 1956, organizers of the transistor missionary receiver project convened a two-day conference in Chicago at the facilities of station WMBI bringing together representatives of the conservative evangelical missionary broadcasting community. As production of a missionary transistor receiver became a real possibility in the fall of 1955, the need for broader support from the missionary broadcasting community to provide for the demand and distribution of large numbers of receivers in the field became evident. In January 1956, Robert Luckey of MCS had suggested convening a conference of missionary broadcasters to formulate a joint response to the receiver problem around transistor technology.⁷² Thiessen concurred with Luckey and invited over two dozen managers, engineers, and leaders in the missionary radio field to Chicago, hoping to win them over to his project. In addition to Thiessen, Voss, and Gilmer, conference presenters included Bill Watkins from ELWA, Jim Vaus, Tom Sorrels, and Luckey from MCS, Nat Bercovitz, an engineer from Collins Radio Corporation in California who worked closely with FEBC in the Philippines and who represented the amateur electronics group Christian Radio Associates (CRA) (discussed in chapter 4), and Harold Van Broekhoven from Station TGNA in Guatemala. Thiessen deliberately refrained from inviting leaders of mission agencies to the Chicago conference, preferring not to bring them on board until the project had developed workable radios, whose actual value missionaries could demonstrate in the field.⁷³

The Chicago transistor conference mattered for numerous reasons. First, it demonstrated the process of consensus building visibly at work within the conservative evangelical missionary broadcasting community. Agreement at the conference coalesced around the use of transistor technology as the solution to the world's receiver problem. Second, the meeting illustrated the extensive technical decision-making that went into the design of the missionary transistor receiver. Third, the extensive discussions among key engineers and broadcasters demonstrated a degree of diversity of opinion surrounding technical decisions. Such decisions were not unanimous and never obvious, but involved carefully calculated choices by actors and resulted in a particular set of historical consequences, even if these were not clear at the time. Fourth, the extensive conference proceedings (available in archives) reveal the multiple dimensions of the "receiver problem" which engineers and broadcasters had to consider in addition to technical considerations, including questions of finance, distribution, maintenance, and publicity. Extensive discussions, recorded at the conference, made it clear that attendees fully appreciated the magnitude of their undertaking, based on their first-hand knowledge in the field. In sum, the conference helps us to understand how the missionary transistor receiver took form and provides an in-depth look at the dynamic of the missionary broadcasting community at work.

In his keynote address, Thiessen singled out collaboration as the central theme of the conference. For Thiessen, the conservative evangelical broadcasting community had to respond collectively to the problem of receiver shortage if the solution it produced was to succeed. Collaboration, Thiessen suggested, had a long history in the missionary broadcasting movement, predating the missionary transistor receiver project. Thiessen

maintained that personnel on the transistor receiver project (notably he and Voss) had undertaken extensive consultation with engineers, technical literature, and commercial manufacturers at home, as well as missionary radio stations and missionaries in the field, before convening the Chicago gathering. By sending their representatives to the conference, Thiessen maintained that the field of missionary broadcasting field as a whole, rather than simply a handful of project organizers, had now converged on the transistor as the final technological solution to the decades-old receiver problem.⁷⁴ Thiessen and Voss used the argument of efficiency as a ground for coordinated joint action among missionary broadcasters in addressing the receiver shortage. Thiessen stressed to attendees that “consolidation of effort” on the receiver problem among missionary broadcasters would produce significant economies, avoiding the duplication of effort and waste of money experienced in resolving the earlier “transmitting problem.”⁷⁵ Voss emphasized that a “united front” in manufacturing receivers and group buying would result in significant savings for the project.⁷⁶

Thiessen and Voss hoped to secure collective agreement from conference members on two specific objectives: a final set of technical specifications for the missionary transistor receiver and a production order of 1,000 sets. In order to develop a large world market for the receiver, representatives of missionary radio stations (and not just Thiessen, Gilmer, and Voss) needed to agree on a set of design standards. While Vander Hooning had helped underwrite development costs, mass producing the missionary transistor receiver on the global scale envisioned by Thiessen and Voss required the assistance of the entire missionary radio community to finance production

and distribute sets. Thiessen sought to spread the production costs of the receiver among numerous missionary stations.

In attempting to persuade his colleagues to support his project, Thiessen came up against the hesitations of missionary users. Missionary broadcasters expressed their unwillingness to order large quantities until they were confident that a set conforming to high performance standards had been produced, tested, and proven by use in the field. For Thiessen and Voss, then, achieving “collaboration” involved a delicate balancing act. Collaboration represented both an organizational goal (or end) in itself, as well as a particular means (or language), which Thiessen used to achieve that end. Thiessen and Voss attempted to persuade missionary broadcasters to collaborate by demonstrating that they had already (and always) done so in the past. By stressing to conference attendees the extensive consultations that lay behind the transistor project, Thiessen hoped to gain credibility for his project among the missionary broadcasting community and thereby acquire the endorsement of its representatives, expressed in the immediate placement of a large production order.

Thiessen expressed the urgency of the task. He spoke boldly to fellow conference members: “we must produce sets now.”⁷⁷ Thiessen’s urgent note derived from several sources. First, the goal of world evangelism pressed upon the project and conference organizer. As Thiessen told attendees, at the current rate of evangelization, “countless” millions around the globe would die without ever having a Gospel witness: “There are more people born in one hour than missionaries reach in a whole year.” Technology, in the form of the transistor receiver, provided a partial means toward ending the world-scale crisis in conservative evangelical missions and toward the “fulfilling of Christ’s

command to preach the Gospel to every creature.”⁷⁸ Second, Thiessen had learned from his experience with Vander Hooning (whom he feared he had “lost”) that he would forfeit funding if project development dragged out over a lengthy period of time.⁷⁹ Thiessen hoped to secure immediate financial backing for his project from mission boards and agencies by demonstrating the venture’s immediate potential impact. Third, Thiessen felt conscious pressure from the field in Liberia, where his backers at ELWA faced a dire shortage of workable radios. If he did not meet the backlog soon, managers there might turn back to tube sets as their only alternative, squandering the project’s most valuable resource. Finally, as a competitive visionary, Thiessen desired to beat commercial competitors to the market. Thiessen’s experience with electronics manufacturers in 1955 had clearly shown him that commercial competition in the missionary transistor receiver market lay on the immediate horizon. After meeting with engineers from Motorola, he had commented that the project had only a few months lead in development time over industry.

Voss articulated clearly in the conference’s first session why missionary broadcasters felt compelled to develop their own proprietary transistor receiver rather than use currently available commercial technology. Voss listed the shortcomings of commercially produced radios, outlining the “faults of commercial production” from the standpoint of missionary radio users in eight areas (in the order given): overminiaturization of components, lack of proper batteries overseas, insufficient audio output for “outdoor group listening,” lack of pretuning, high maintenance, poor cabinets, high cost, and inadequate tropicalization (or weather treatment). Voss later added lack of familiarity with the needs of missionary radio users as a ninth drawback of commercial

radio manufacturing in the United States. Despite the deficiencies of commercially available radios, however, Voss identified the task facing missionary engineers as one of “adaptation” rather than invention *per se*. In addressing the problem of receiver shortage overseas, engineers on the project were to adapt current technology rather than originating a technical solution from scratch. As this study will show, the missionary transistor receiver represented an example of conservative innovation within an existing technological framework rather than a radical departure or creation of a new paradigm.⁸⁰

Conference attendees conducted extensive debates about design standards, revealing diversity of opinion in the missionary broadcasting community and indicating that the design of a missionary transistor receiver required making choices with complex technical trade-offs. Members debated the relative advantages of TRF and superhet circuits. While TRF sets (almost all experimental sets) cost less and offered greater sensitivity in the broadcast band, superhets reached the higher frequencies of the short-wave spectrum where most missionary stations broadcast. Representatives also debated the advantages of producing broadcast-band versus short-wave sets. Long-wave sets dramatically simplified the task of pretuning since they employed a single frequency and relied on ground (vs sky) propagation. On the other hand, long-wave provided much narrower coverage and smaller audiences for broadcasters than short-wave. Finally, while conference members recognized that many missionaries preferred “a set that the people can’t tune to any other station,” they recognized that pretuned receivers had the significant economic and technical implications, discussed later in this section and at length in the following chapter.⁸¹

Attendees discussed production possibilities at length, considering three options: large commercial manufacturers, individual and group assembly, and small producers. Discussants ruled out major companies almost at once because they presented an inflexible option. As Thiessen and Voss's experience had shown, major electronics producers required large production runs of at least 10,000 sets. Moreover, mass-production firms would have great difficulty accommodating the demands of sixteen different missionary radio stations for pretuned receivers, since each frequency would require a change in set up.⁸²

Assembly of radio kits provoked extensive debate among attendees. An established practice that capitalized on missionary broadcasters' resources, kit assembly presented an appealing option to several missionary broadcasters. Radio parts could be imported into many countries duty free. National workers provided a cheap and readily available form of labor. Various groups, such as CRA in California (as discussed in chapter 4) and Station HCJB in Ecuador, had successfully demonstrated the viability of the kit assembly approach, while stations like HLKY in Korea and "La Cruz del Sur" in Central America possessed the "qualified national help" to assemble sets in the future.⁸³ Proponents of kit assembly cited how the use of techniques such as printed circuits and dip soldering could streamline the assembly process and thereby (in Voss' words) "make it so fool proof that anybody can be trained to do it" [i.e., even a foreign national].⁸⁴ Nevertheless, conference members expressed overall skepticism about the viability of this production method overseas. Simply testing parts in the United States and then shipping them overseas cost almost as much as having kits assembled domestically.⁸⁵ While middle-aged church volunteers working for CRA could put kits together, members

openly doubted the abilities of trained nationals in most countries overseas to do so properly, even with the use of printed circuits and soldered wiring⁸⁶

The possibility of using small manufacturers attracted the most attention from conference members since it provided project personnel with the greatest flexibility in production. Use of a small specialty firm would allow project engineers to make product improvements and enable missionary broadcasters to order customized sets on individual frequencies and in kit form. In Voss's estimation, a small coil manufacturer represented an ideal middle-of-the road starting point for the project, between large companies that demanded inflexible mass orders, on the one hand, and individual assembly, which lacked standardization, on the other. By starting with a small company, project managers could gain valuable production experience, gradually taking over "the assembly, purchasing, and engineering" of receivers themselves as they acquired confidence.⁸⁷

Discussions at the conference clearly revealed the complexity of employing pretuned radios in the mission field. Conference members agreed that pretuning of transistor sets was necessary.⁸⁸ Missionary broadcasters, however, clearly distinguished between the pretuning of long-wave versus short-wave frequencies. Short-wave broadcasters presented a challenge to engineers of a pretuned transistor set, as they operated on multiple wavelengths in order to compensate for vagaries in propagation conditions and to reach greater numbers of listeners (as stated in chapter 6). FEBC, the major missionary broadcaster in Asia, stated that it was not even interested in a transistor radio unless it had three bands.⁸⁹ The need to pretune multiple frequencies offset the advantage of pretuning's technical simplicity, touted by Thiessen in the fall of 1955. Faced with the difficulty of pretuning on the higher frequencies, members of the

conference decided pragmatically to initiate production with a broadcast-band (long-wave) receiver rather than the far more complex short-wave model, hoping to create momentum for the project. The first production sets would hence be easily pretunable to any frequency in the AM band and would come with a control on the front panel for fine adjustment, as Ries had suggested after testing the first experimental model.

Conference discussions indicated that the ability of missionary broadcasters to pretune receivers was also tied to the manner in which sets were distributed.

Governments in many parts of the world, particularly Latin America, objected to the sale of pretuned receivers since pre-tuned sets were “not for the advancement of radio broadcasting in general in any country, but rather only for the propagation of a religious faith of a minority.” While sets sold commercially would undergo import duty as well as a possible monthly receiver tax in many countries, pretuned sets that were given away would be tax-free, costing considerably less.⁹⁰ A clear financial incentive therefore existed for missionary broadcasters to adopt pretuning and link it with free distribution (or “placement”) of receivers. In this way, use of pretuning in the case of the missionary transistor receiver may have biased missionary broadcasters’ attitudes and prejudiced them against market forces and commercialism.

Discussion of how to finance transistor receivers also gained the attention of conference attendees. Members discussed the idea of “sponsored sets” as a method of financing individual radios. Individuals, churches, Sunday school classes, and mission societies would pay for sets through direct contributions and receive a certificate in return, which would include the number of the set. Members mentioned additional means of

raising support for the receiver project, including extensive advertising, “deputation drives” by project personnel, and recruitment of national churches.⁹¹

Conference members also turned their attention to the questions of set distribution and maintenance. Distribution made up a large part of receiver costs, especially in the developing world. Committee members estimated that commercial firms paid between 30-60% of retail cost to market products through distributors and dealers in the United States.⁹² Members discussed two methods to distribute receivers. First, a central clearing house for missionary broadcasters, provided by a large conservative evangelical mission agency, such as EFMA, IFMA, MES, or the program producer “Back to the Bible,” would distribute sets to missionary radio stations and provide servicing. Alternatively, individual missions, societies, and stations could handle the ordering, distributing, and financing of receivers on their own. Whether through a collective body or individually, the conference attendees clearly identified missionaries as the intended users of the missionary transistor receiver and intended to place a “radio in every village” via their custodianship.

Geography greatly magnified the technical challenges of servicing sets. Increasing distance resulted in a geographically proportionate loss of control by station personnel over sets and an increased reliance on missionaries in the field. Sets located in the immediate vicinity of the station posed the least difficulty for technical staff, since owners or borrowers could be expected to bring them to the station’s repair shop. Listeners in more distant areas could channel sets through distribution centers or mission stations back to the station “repair base.”⁹³ In the view of conference members, however, the global expansion of missionary broadcasting would raise considerable distribution

problems, since stations would need to rely on mission stations to distribute and service sets and would inevitably lose a significant degree of control. Members discussed options for servicing sets in areas of the world where few, if any, missionaries existed. Members came up with the idea of a corps of missionary-trained, “circuit-riding” repairmen, who would cover large areas by jeep or station wagon over an extended period, conducting evangelistic services and recording campaigns en route. In the estimation of conference delegates, the long-term solution to the problem of servicing sets lay in training nationals.⁹⁴

Finally, attendees in Chicago appreciated the challenges and necessity of publicizing the missionary transistor receiver. Thiessen outlined a grass-roots promotional strategy, which he considered would be the most effective way to promote the project. Missionary radio stations would have to persuade missionaries in their area of the value of sets, who would then in turn persuade their mission boards to buy them in larger quantities.⁹⁵ Conference members agreed to advertise the project via Christian periodicals, denominational publications, news releases to mission executives, trade journals, and missionary radio stations themselves.⁹⁶ Seventy figures in the missionary radio field received a conference report after it concluded and Luckey presented a précis of the meeting for a wider audience in the June 1956 issue of *Foreign Missionary Radio*. He informed the public that the conference hoped to have a receiver in production by early 1957.⁹⁷

By the close of the conference, representatives had “converged” on a “basic, integrated set of working specs” for the missionary transistor receiver. Members introduced an important change in the design framework of the receiver, reversing Voss

and Gilmer's early development results. Despite its greater cost, members settled on the use of a superhet circuit, since it was more amenable to short-wave reception. The set with superhet circuit would have an IF of 455 KHz and a bandwidth (or range) of 8 KHz. The conference aimed to roll out a long-wave set prototype within six months – i.e., by the end of 1956 - and develop a short-wave set directly afterwards.

In addition to switching to a superhet circuit, conference attendees made several other major decisions about the overall design shape of the missionary transistor receiver. Taken together, these choices were calculated to maximize the possible number of users for the new missionary receiver. Delegates strongly endorsed the use of a modular circuit design, which divided the superhet circuit into six stages adapted from experimental sets, employing six PNP transistors.⁹⁸ These six stages included a combined converter and oscillator stage, two IF stages, and three audio stages. The use of modular design afforded project organizers a high degree of flexibility, since the circuit could be adapted to multiple users and uses. By adding a converter stage, the set could easily be modified for short-wave use, while the audio output could be adapted for mixed purpose with a phonograph or as a p.a. system. Voss identified a wide array of potential users for the receiver, including domestic radio stations, missionary radio stations (both broadcast-band and short-wave), amateur operators, communication networks, and plane-to-ground communications. Members of the conference agreed to develop a receiver model gradually after production began and to continue on-going testing because of the advantages this approach afforded project engineers. Instead of mass production, a “moderate continuous flow of sets” would allow designers to customize sets for niche audiences, make further receiver improvements, and maximize the benefit of feedback

from the field. As mentioned, the group anticipated that by the start of 1957 they would have a receiver in production.⁹⁹

As suggested earlier, the conference proceedings revealed that the missionary transistor receiver involved the adaptation of conventional, even banal, receiver technology to the conditions of the mission field, rather than invention of a distinctly new type of radio. Surprisingly, attendees devoted little time to discussion of transistors themselves, the “revolutionary” component of the new receiver. Instead, engineers at the conference focused technical discussion on the receiver’s coil components. Conference members agreed with Voss that coils and transformers were the “main variable” in the new receiver, which effected frequency tuning, selectivity, fidelity, efficiency, and tropicalization,¹⁰⁰ Coils and transformers together, engineers concurred, made up “practically [the] whole set.”¹⁰¹ Given their interest in customizing off-the-shelf receiver technology, the group expressed a predilection for a small set manufacturer with experience in building coils, along with a willingness to furnish sets in kit form.¹⁰² As Voss told the group, “we believe the coil manufacturer is the real *big* company of possibility rather than the transistor manufacturer.”¹⁰³

The conference agreed to a detailed timetable for producing a transistor missionary receiver. To run the project, conference members created a very loose, decentralized managerial structure. A Transistor Radio Receiver Committee, consisting of seven representatives of the organizations most actively involved in developing the missionary transistor receiver, would henceforth oversee the development and production of the missionary transistor receiver. Its members included Thiessen as the Chairman (and representative of ELWA), Voss and Gilmer (WMBI), Nat Bercovitz (CRA), and

Robert Luckey, Jim Vaus, and Tom Sorrels (MCS). Bercovitz would formally draw up a new set of receiver specifications based on the revisions made by the conference. The committee would then begin accepting bids to manufacture the radio, starting in June 1956. After several prototypes had been tested in the United States, a line of 50 sets would be produced for testing overseas by various mission boards, followed by the projected completion of 1,000 sets. Such an order, members assented with excitement, would be “bigger than anything on the field at the present time.”¹⁰⁴ While Thiessen had originally publicized the anticipated cost of the missionary transistor receiver as low as \$25, experts at the conference agreed that the use of a superhet would raise the price considerably and hoped that they could keep it under \$35 per set. Ominously, despite the conference’s timetable and optimism about costs, and despite the pleas of Chairman Thiessen, no missionary organization stepped forward during the meeting to take up responsibility for the first large order of sets.

Conclusion

The Significance of the Missionary Transistor Research Meeting

The Missionary Transistor Research Meeting proved an important milestone in the attempt to build a missionary transistor receiver, though not entirely in the ways its organizers had planned. The meeting coalesced support among a significant segment of the missionary broadcasting community for a transistor solution to the receiver problem, led by a transistor committee under Thiessen and Voss. The meeting thus marked the transition for the missionary transistor receiver from the pet project of a small coterie of missionary devotees to the collective product of an entire movement.

Despite Chairman Thiessen' impassioned request, however, no single group took responsibility for the initial order of 1,000 transistor sets. Contrary to the published price of \$25, project organizers raised its cost estimates and increasingly realized it would be difficult to build a superhet short-wave receiver, the missionary radio staple, for much less than \$35 (a figure not far under earlier industry bids of \$40). Though engineers agreed on a set of specifications, technical discussion at the conference highlighted the obstacles to batch producing large quantities of receivers that lay ahead, particularly the demands posed by pretuning high-frequency receivers for missionary radio's numerous short-wave broadcasters. Feeling a sense of urgency to get a product on the market, organizers resolved to produce a pretunable transistor set for the AM market in six months, a niche where they held the least influence and where they faced the most imminent commercial competition.

As the early history of the missionary transistor receiver shows, field relations represented a significant Achilles' heel for the project. Development of a field prototype revealed tensions between the respective priorities of developers at home (concerned with rapidly producing a product and retaining funding) and users in the mission field (interested in working out bugs through extended testing and more attuned to the needs of local populations). Project engineer Tom Gilmer articulated the tension between the conflicting demands of rapid development and high-quality performance, endemic to the project. While it was vital to get sample sets in the field soon, he wrote Thiessen in the summer of 1956, it was equally critical that the first 1,000 sets be well made, since the "whole project may hinge on the first sets sent out."¹⁰⁵ While conference members agreed to a "gradual" production approach in order to resolve these kinds of differences,

underlying tensions between project personnel, ELWA managers, and SIM officials lingered, only to resurface in even more dramatic form during the next stage of the project.

The story of the missionary transistor receiver, from Thiessen's original conception on board a missionary airplane in early 1954 to the historic Chicago consultation in the spring of 1956, comprises an important, untold chapter in the American (and later world) history of the transistor radio. The transistor had a dramatic effect in the mission field, if a far less revolutionary one than at home, by reducing power consumption of receivers by nearly nine-tenths. As this chapter has shown, however, in the hands of missionary users, the missionary transistor receiver was at bottom a conventional device that paired the new amplifying mechanism with standard circuitry and hardware in a new evangelistic application overseas. As Voss and other engineers pointed out, it was the set's use of conventional coils and transformers, not transistors, which distinguished the novel receiver. In this sense, missionary design of a production prototype involved far more adaptation (or "innovation," in its technical sense) than invention. In the end, developing the design of a missionary transistor receiver would prove far easier than producing actual radios, a task which would take nearly three more years of devotion and hard work to complete. Despite considerable difficulty, the perseverance of project organizers would illustrate the deep, nearly indefatigable faith of conservative evangelicals in the redemptive power of technology.

¹ Voss estimated that it cost FEBC close to \$100 to service a set that it cost \$35 to produce. Maintenance costs included the travel expenses to repair sets and the maintenance of a full-time repairman.

² Letter from Hank Voss to Henry Hungerpilller, January 3, 1954, Folder 17, Box 33, Collection 86 (International Christian Broadcasters), Billy Graham Center Archives (BGCA), Wheaton, IL.

³ Michael Brian Schieffer, *The Portable Radio in American Life* (University of Arizona, 1991).

⁴ For a typical account in a recent American history textbook, see Pauline Maier, Merritt Roe Smith, Alexander Keysaar, and Daniel J. Kevles, *Inventing America: A History of the United States*, Volume 2: From 1865 (Norton, 2003), Chapter 29.

⁵ Simon Partner, *Assembled in Japan: Electrical Goods and the Making of the Japanese Consumer* (University of California, 1999) and John Tilton, *International Diffusion of Technology: The Case of Semiconductor* (Brookings Institution, 1971)

⁶ Nathan Rosenberg, *Perspectives on Technology* (Cambridge University, 1976), *Inside the Black Box: Technology and Economics* (Cambridge University, 1982).

⁷ Abe Thiessen, "The Receiver Ministry," undated, Folder 16, Box 33, Collection 86, BGCA.

⁸ Abe Thiessen, "The Receiver Ministry," undated, Folder 16, Box 33, Collection 86, BGCA.

⁹ Joel A. Carpenter, "Fundamentalist Institutions and the Rise of Evangelical Protestantism, 1929-1942" in Larry Eskridge and Mark Noll, eds, *More Money, More Ministry: Money and Evangelicals in Recent North American History* (Eerdmans, 2000), 259-60, and Joel A. Carpenter, "Propagating the Faith Once Delivered: The Fundamentalist Missionary Enterprise, 1920-1945" in Joel A. Carpenter and Wilbert R. Shenk, eds., *Earthen Vessels: American Evangelicals and Foreign Missions, 1880-1980* (Eerdmans, 1990), 105.

¹⁰ For study of Rader's prominent role in religious broadcasting, see Tona Hangen, *Redeeming the Dial: Radio, Religion, and Popular Culture in American Popular Culture in America* (University of North Carolina, 2002).

¹¹ Joel Carpenter, "Propagating the Faith Once Delivered" in George Marsden, ed., *Evangelicalism in Modern America* (Eerdmans, 1984), 111

¹² Joel A. Carpenter, "Fundamentalist Institutions and the Rise of Evangelical Protestantism, 1929-1942" in Larry Eskridge and Mark Noll, eds., *More Money, More Ministry: Money and Evangelicals in Recent North American History* (Eerdmans, 2000), 259-60.

¹³ Letter from Herman Voss to Abe Thiessen, June 17, 1957, Folder 26, Box 33, Collection 86, BGCA.

¹⁴ Henry Hungerpilller to Hank Voss, December 11, 1953, Folder 17, Box 33, Collection 86, BGCA.

¹⁵ Hank Voss, "ELWA-WMBI Presentation," Missionary Transistor Research Meeting ("MTRM"), April 30 – May 1, 1956, Folder 12, Box 27, Collection 86, BGCA; Henry Hungerpilller to Hank Voss, December 11, 1953, Folder 17, Box 33, Collection 86, BGCA.

¹⁶ Abe Thiessen, "A Radio Set in Every Village," Folder 16, Box 33, Collection 86, BGCA.

¹⁷ Letter from John VanderSchie to J.O. Percy, October 7, 1953, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM International Archives (SIM), Fort Mill, SC.

¹⁸ Letter from John VanderSchie to J.O. Percy, October 7, 1953; letter from C.G. Beacham to Abe Thiessen, August 30, 1954, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

¹⁹ Letter from R.M. Carstens, International Division, Zenith Radio Corporation, to Robert Vander Hooning, January 19, 1954, Folder 23, Box 33, Collection 86, BGCA; letter from A. Rivera, Emerson Radio and Phonograph Corporation to Robert Vander Hooning, January 6, 1954, Folder 32, Box 35, Collection 86, BGCA; letter from Walter Hardy, Hallicrafters Export Division – Philips Export Company, to Robert Vander Hooning, January 6, 1954, Folder 32, Box 35, Collection 86, BGCA; letter from Ray Schweissinger, Fitzpatrick Electric Supply Co., to Robert Vander Hooning, December 16, 1953, Folder 32, Box 35, Collection 86, BGCA; letter from F. Buttermann, Special Sales Division, Philco International Corporation, to Abe Thiessen, April 13, 1954, Folder 33, Box 14, Collection 86, BGCA.

²⁰ Letter from J.W. Reynard, Electronics and Merchandise Division, General Electric International Company, December 18, 1953, Folder 32, Box 35, Collection 86, BGCA.

²¹ Letter from John VanderSchie to J.O. Percy, March 19, 1954, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

²² Letter from Abe Thiessen to Mr. Gerrit Vander Hooning, June 9, 1954, Folder 35, Box 32, Collection 86, BGCA.

²³ Note by Tom Gilmer, undated (ca. January 1957?), Folder 26, Box 33, Collection 86, BGCA.

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- ²⁴ “Transistor Missionary Radio Receiver Data: Report No. 1” attached to Letter from Abe Thiessen to Ray de la Haye, October 26, 1955, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM; *Foreign Missionary Radio*, January 1, 1956, Volume I, No. 3, Billy Graham Center Library (BGCL), Wheaton IL.
- ²⁵ Letter from Abe Thiessen to Ray de la Haye, October 26, 1955, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ²⁶ Letter from Herschel Ries to Abe Thiessen, February 23, 1955, Folder 35, Box 32, Collection 86, BGCA.
- ²⁷ “Itemized Report on Transistor Sets,” undated (1955 or 1956), Folder 17, Box 32, Collection 86, BGCA.
- ²⁸ Letter from Herschel Ries to Abe Thiessen, May 5, 1955, Folder 35, Box 19, Collection 86, BGCA; undated “Itemized Report on Transistor Sets” (1955 or 1956), Folder 17, Box 32, Collection 86, BGCA.
- ²⁹ Letter from Herschel Ries to Abe Thiessen, March 30, 1955, Folder 35, Box 19, Collection 86, BGCA.
- ³⁰ Letter from Herschel Ries to Hank Voss and Tom Gilmer, October 28, 1955, Folder 35, Box 19, Collection 86, BGCA; “Itemized Report on Transistor Sets,” undated (1955 or 1956), Folder 17, Box 32, Collection 86, BGCA; “Transistor Missionary Radio Receiver Data: Report No. 1” attached to Letter from Abe Thiessen to Ray de la Haye, October 26, 1955, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ³¹ Letter from Stanley Brookman to Abe Thiessen, April 5, 1957, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ³² Letter from Herschel Ries to Abe Thiessen, February 23, 1955, Folder 35, Box 32, Collection 86, BGCA.
- ³³ Letter to Hank Voss, unsigned, August 18, 1955, Folder 17, Box 32, Collection 86, BGCA.
- ³⁴ Letter from Stanley Brookman to Abe Thiessen, April 5, 1957, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ³⁵ Letter from Philip B. Smith to Abe Thiessen, August 3?, 1957, Folder 26, Box 33, Collection 86, BGCA.
- ³⁶ Letter from Herschel Ries to Abe Thiessen, February 23, 1955, Folder 35, Box 32, Collection 86, BGCA.; letter from Herschel Ries to Abe Thiessen, March 30, 1955, Folder 35, Box 19, Collection 86, BGCA; anonymous, “Report on 4MR 710,” undated, Folder 17, Box 32, Collection 86, BGCA.
- ³⁶ “Transistor Missionary Radio Receiver Data: Report No. 1” attached to Letter from Abe Thiessen to Ray de la Haye, October 26, 1955, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ³⁷ “Transistor Missionary Radio Receiver Data: Report No. 1” attached to Letter from Abe Thiessen to Ray de la Haye, October 26, 1955, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ³⁸ “Transistor Missionary Radio Receiver Data: Report No. 1,” attached to Letter from Abe Thiessen to Ray de la Haye, October 26, 1955, p.4, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ³⁹ “Transistor Missionary Radio Receiver Data: Report No. 1,” attached to Letter from Abe Thiessen to Ray de la Haye, October 26, 1955, p.4, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁴⁰ “Transistor Missionary Radio Receiver Data: Report No. 1,” attached to Letter from Abe Thiessen to Ray de la Haye, October 26, 1955, p.4, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁴¹ The following seven missionary stations received experimental TRF sets: CP27, HCJB, HOXO, TGNA, ELWA, WMBI, and DZAS. Other stations were invited to try sets, but Tom Gilmer noted that “at present time we are limited to frequencies between 680 KC and 760 KC.” Source: Tom Gilmer, note, undated (ca. January 1957), Folder 28, Box 86, Collection 86, BGCA.
- ⁴² As a result, sets could be tuned directly with RF transformers instead of first converting the incoming signal to an intermediate frequency (IF) transformer through the addition of an oscillating frequency. Hank Voss, “ELWA-WMBI Presentation,” Missionary Transistor Research Meeting (“MTRM”), Folder 12, Box 27, Collection 86, BGCA.
- ⁴³ “Itemized Report on Transistor Sets” (1955 or 1956), Folder 17, Box 32, Collection 86, BGCA.; “Report on Field Tests of Last Transistor Sets,” April 17, 1956; Letter from Stanley Brookman to Abe Thiessen, April 5, 1957, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

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- ⁴⁴ Letter from Herschel Ries to Abe Thiessen, March 30, 1955, Folder 35, Box 19, Collection 86, BGCA; anonymous, "Report on 4MR 710," undated, Folder 17, Box 32, Collection 86, BGCA; "Itemized Report on Transistor Sets" (1955 or 1956), Folder 17, Box 32, Collection 86, BGCA.
- ⁴⁵ Letter from Stanley Brookman to Abe Thiessen, April 5, 1957, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁴⁶ Anonymous, "Report on Field Tests of Last Transistor Sets," April 17, 1956, Collection 86, BGCA.
- ⁴⁷ "Transistor Missionary Radio Receiver Data: Report No. 1," attached to Letter from Abe Thiessen to Ray de la Haye, October 26, 1955, p.7, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁴⁸ Letter from Philip B. Smith to Abe Thiessen, August 3 [?], 1957, Folder 26, Box 33, Collection 86, BGCA.
- ⁴⁹ Anonymous, "Report on 4MR 710," undated, Folder 17, Box 32, Collection 86, BGCA.
- ⁵⁰ Letter from Abe Thiessen to Herschel Ries, May 26, 1955, Folder 35, Box 19, Collection 86, BGCA.
- ⁵¹ Letter from Abe Thiessen to Herschel Ries, August 8, 1955, Folder 35, Box 19, Collection 86, BGCA.
- ⁵² Letter from Abe Thiessen to Herschel Ries, August 8, 1955, Folder 35, Box 19, Collection 86, BGCA.
- ⁵³ Letter from Abe Thiessen to Herschel Ries, August 29, 1955, Folder 35, Box 19, Collection 86, BGCA.
- ⁵⁴ Letter from Herschel Ries to Abe Thiessen, October 37 [sic], 1955, Folder 35, Box 19, Collection 86, BGCA.
- ⁵⁵ Letter from Herschel Ries to Abe Thiessen, March 30, 1955, Folder 35, Box 19, Collection 86, BGCA.
- ⁵⁶ Letter from Abe Thiessen to Ray de la Haye, October 26, 1955, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁵⁷ Letter from Abe Thiessen to Herschel Ries, August 8, 1955, Folder 35, Box 19, Collection 86, BGCA.
- ⁵⁸ "Transistor Missionary Radio Receiver Data: Report No. 1," attached to Letter from Abe Thiessen to Ray de la Haye, October 26, 1955, p.7, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁵⁹ "Transistor Missionary Radio Receiver Data: Report No. 1," attached to Letter from Abe Thiessen to Ray de la Haye, October 26, 1955, p.7, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁶⁰ Braun and Macdonald state that by 1952 Raytheon "was producing more transistors for the open market than any other company" (p. 69). Raytheon dominated the first consumer application of the transistor, the hearing aid market, manufacturing 10,000 junction transistors a month at \$9 apiece for this niche application by March 1953. Ernest Braun and Stuart MacDonald, *Revolution in Miniature: The History and Impact of Semiconductor Electronics* (Cambridge University, 1978).
- ⁶¹ Letter from H.F. Hodson, District Sales Manager, Semi-Conductor Products, Electronics Division, General Electric Company, to Abe Thiessen, March 30, 1955, Folder 40, Box 32, Collection 86, BGCA.
- ⁶² Letter from Abe Thiessen to Herschel Ries, April 13, 1955, and letter from Abe Thiessen to Herschel Ries, May 26, 1955, Folder 35, Box 19, Collection 86, BGCA.
- ⁶³ Letter from Abe Thiessen to Herschel Ries, August 8, 1955, Folder 35, Box 19, Collection 86, BGCA; Letter from Abe Thiessen to Ray de la Haye, October 26, 1955, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁶⁴ Letter from Abe Thiessen to Herschel Ries, August 8, 1955, Folder 35, Box 19, Collection 86, BGCA.
- ⁶⁵ Letter from Abe Thiessen to Herschel Ries, August 29, 1955, Folder 35, Box 19, Collection 86, BGCA.
- ⁶⁶ MTRM, "Discussion of Production Possibilities after Jim Vaus," Folder 12, Box 27, Collection 86, BGCA.
- ⁶⁷ Letter from J.R. Neubauer, Systems Communication Engineering, Engineering Products Division, RCA, to Rev. A.G. Thiessen, April 10, 1956, Folder 33, Box 32, Collection 86, BGCA.
- ⁶⁸ MTRM, "Discussion of Production Possibilities after Jim Vaus," Folder 12, Box 27, Collection 86, BGCA.
- ⁶⁹ Letter from J.R. Neubauer, Systems Communication Engineering, Engineering Products Division, RCA, to Rev. A.G. Thiessen, April 10, 1956, Folder 33, Box 32, Collection 86, BGCA.
- ⁷⁰ "Transistor Missionary Radio Receiver Data: Report No. 1," attached to Letter from Abe Thiessen to Ray de la Haye, October 26, 1955, p.7, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁷¹ Letter from J.R. Neubauer, Systems Communication Engineering, Engineering Products Division, RCA, to Rev. A.G. Thiessen, April 10, 1956, Folder 33, Box 32, Collection 86, BGCA.

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- ⁷² Abe Thiessen, Keynote Address, MTRM, Folder 12, Box 27, Collection 86, BGCA.
- ⁷³ Abe Thiessen, "Remarks," MTRM, Folder 12, Box 27, Collection 86, BGCA.
- ⁷⁴ Abe Thiessen, Keynote Address, MTRM, Folder 12, Box 27, Collection 86, BGCA.
- ⁷⁵ Abe Thiessen, Keynote Address, MTRM, Folder 12, Box 27, Collection 86, BGCA.
- ⁷⁶ Hank Voss, "ELWA-WMBI Presentation," MTRM, Folder 12, Box 27, Collection 86, BGCA.
- ⁷⁷ MTRM, "Discussion of Production Possibilities," MTRM, Folder 12, Box 27, Collection 86, BGCA.
- ⁷⁸ Abe Thiessen, Keynote Address, MTRM, Folder 12, Box 27, Collection 86, BGCA.
- ⁷⁹ Abe Thiessen's comments can be found in Tom Gilmer, "Cost Analysis," MTRM, Folder 12, Box 27, Collection 86, BGCA.
- ⁸⁰ Joel Mokyr, *The Lever of Riches: Technological Creativity and Economic Progress* (Oxford University, 1990).
- ⁸¹ MTRM, "Technical Discussion," MTRM, Folder 12, Box 27, Collection 86, BGCA.
- ⁸² Hank Voss, "Production Possibilities, ELWA-WMBI" and "Discussion of Production Possibilities after Jim Vaus," MTRM, Folder 12, Box 27, Collection 86, BGCA.
- ⁸³ Letter from Tom Gilmer to Abe Thiessen, October 15, 1956, Folder 27, Box 32, Collection 86, BGCA.
- ⁸⁴ "Discussion of Production Possibilities after Jim Vaus," MTRM, Folder 12, Box 27, Collection 86, BGCA.
- ⁸⁵ "Discussion of Production Possibilities," MTRM, Folder 12, Box 27, Collection 86, BGCA.
- ⁸⁶ "Discussion of Production Possibilities after Jim Vaus," MTRM, Folder 12, Box 27, Collection 86, BGCA.
- ⁸⁷ Hank Voss, "Production Possibilities, ELWA-WMBI," MTRM, Folder 12, Box 27, Collection 86, BGCA.
- ⁸⁸ Robert Luckey, "Summary of Monday's Meetings," MTRM, Folder 12, Box 27, Collection 86, BGCA.
- ⁸⁹ "Technical Discussion," MTRM, Folder 12, Box 27, Collection 86, BGCA.
- ⁹⁰ Harold Von Broekhoven, "Financing Pre-Tuned Transistor Radio Receivers," MTRM, Folder 12, Box 27, Collection 86, BGCA.
- ⁹¹ Harold Von Broekhoven, "Financing Pre-Tuned Transistor Radio Receivers," MTRM, Folder 12, Box 27, Collection 86, BGCA.
- ⁹² "Minutes of World Committee on Missionary Radio: Transistor Radio Receiver Committee," in Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁹³ Bill Watkins, "Distribution," MTRM, Folder 12, Box 27, Collection 86, BGCA.
- ⁹⁴ Bill Watkins, "Distribution"; MTRM, "Discussion of Distribution Problems," MTRM, Folder 12, Box 27, Collection 86, BGCA.
- ⁹⁵ "Discussion of financing and publicity," MTRM, Folder 12, Box 27, Collection 86, BGCA.
- ⁹⁶ "Publicity for the Missionary Transistor Receiver," MTRM, Folder 12, Box 27, Collection 86, BGCA.
- ⁹⁷ Robert Luckey, "Missionary Radio Transistor Conference," *Foreign Missionary Radio*, June 1, 1956, Volume I, No. 8, Billy Graham Center Library (BGCL).
- ⁹⁸ These six stages included a combined converter and oscillator stage, two IF stages, and three audio stages.
- ⁹⁹ Robert Luckey, "Missionary Radio Transistor Conference," *Foreign Missionary Radio*, June 1, 1956, Volume I, No. 8, BGCL.
- ¹⁰⁰ Hank Voss, "Reactions to the Transistor Conference," MTRM, Folder 12, Box 27, Collection 86, BGCA.
- ¹⁰¹ "Organization Discussion, MTRM, Folder 12, Box 27, Collection 86, BGCA.
- ¹⁰² Hank Voss, "Reactions to the Transistor Conference," MTRM, Folder 12, Box 27, Collection 86, BGCA.
- ¹⁰³ Hank Voss, "Production Possibilities, ELWA-WMBI," MTRM, Folder 12, Box 27, Collection 86, BGCA.
- ¹⁰⁴ Robert Luckey, "Summary of Monday's Meeting," "Report on Transistor Conference," and "Discussion of Distribution Problems," MTRM, Folder 12, Box 27, Collection 86, BGCA.
- ¹⁰⁵ Letter from Tom Gilmer to Abe Thiessen, August 30, 1956, Folder 27, Box 32, Collection 86, BGCA.

Chapter 8

Producing the Missionary Transistor Receiver, 1956-59

Introduction

The current chapter continues the narrative of the transistor receiver project during its second, production phase, tracing its evolution from the selection of a manufacturer through extended field testing of shortwave prototypes to the production of the first run of receivers (known as “Villagers”) and the end of the project.

Important strands link the development and production stages of the transistor receiver project into a single tale. In the face of continuing obstacles and difficulties, Thiessen and the principal organizers maintained the original vision of the project “to provide as simple and economical a radio set as possible for the purpose of giving voice to the Gospel in the multitudes of villages that are filled with lost men and women, boys and girls.”¹ By building a wide-spread institutional consensus and awakening wide-spread interest in a transistor alternative, principals during the production phase of the receiver project further consolidated the “turn to technology” in missionary broadcasting circles as the answer to the receiver problem in developing countries.

The same set of actors performing in the same historical context undertook the second phase of the project. As the production phase of the project evolved, earlier tensions intensified between the projects three main groups of proponents: managers and engineers in Chicago, ELWA officials in Monrovia, and SIM executives headquartered in Jos, Nigeria and in New York City. The organizers responsible for developing the missionary transistor receiver felt a mounting sense of urgency as the project neared its

final stages. Faced with the accelerating pace of high-frequency transistor development in the late 1950s and the pending emergence of a global transistor radio market, transistor committee members felt conscious pressure from their commercial rivals in industry and sensed that they had a diminishing window of opportunity within which to produce a distinctive product.

At the same as it maintained elements of continuity, however, several key points distinguished the production stage from the development stage of the transistor receiver project. Whereas in the development stage, key actors had concentrated initially on developing a broadcast-band (AM) transistor receiver for the mission field, in the production stage of the project organizers focused attention primarily on bringing out a shortwave model. Producing a shortwave transistor receiver, in fact, became the hallmark of the missionary transistor receiver project.

Putting out a shortwave model during this second phase proved far more problematic than its earlier broadcast-band counterpart. Construction of a shortwave receiver necessitated the strategic switch from TRF to superhet circuits because of the need for higher sensitivity. Unlike AM sets, transistors rather than coils made up the critical component of shortwave sets, requiring developers to draw on the cutting-edge of transistor research at the high-frequency section of the radio spectrum. Compared to the broadcast band, shortwave reception posed considerably greater technical difficulties. Testing of short-wave models was far more difficult for technical staff than broadcast-band models because of the longer distances which technicians needed to travel. Since shortwave broadcasting relied on so many variable factors, it also proved a tremendous

challenge to the feature of fixed tuning. Pretuning itself presented a further difficulty for engineers because it fragmented the missionary broadcasting market drastically.

A detailed account of the missionary transistor receiver project shows the important ways in which it resembled and differed from earlier attempts to build a missionary receiver for the masses. Thiessen drew his original vision for the missionary transistor receiver from the successful experiments with portable radios pioneered by Clarence Jones, HCJB's Radio Circle, FEBC in the Philippines, and ELWA's own receiver department: "Experience has shown that by placing the little "box that talks" in otherwise unreachable villages, the Gospel can be sounded forth daily to the salvation of multitudes of never dying souls."² Yet, as this chapter makes clear, the turn to transistor technology by missionary broadcasters and engineers resulted in a distinct product with a particular profile and purpose that clearly set it apart from earlier attempts to reach the world for Christ through radio, notably Jones's proposal to build a low-cost receiver for the masses. The documentation of the transistor receiver project presented here demonstrates that the radios produced by Thiessen et al. were designed to satisfy specific cultural objectives and targeted at a far narrower group of missionary users.

Selecting a Manufacturer, June 1956 - December 1956

Members of the Chicago conference favored selection of El Rad Manufacturing, a small, specialty coil producer located in the Chicago area, to produce the missionary transistor receiver. The company had first come to the attention of conference attendees during the May meeting. John T. Clark, the company's owner, had a strong personal interest in the missionary receiver project. Clark made a presentation to the Chicago meeting, participated in extensive technical discussions, and provided a hand-made coil for use in experimental sets (which retailed at \$15.00) at a price of less than a dollar.³

With numerous qualifications, El Rad represented a nearly ideal candidate to manufacture the missionary transistor receiver from the committee's point of view. By 1956, the company had cornered 80-90% of the coil market in the Midwest, manufacturing components for radios and televisions produced by large electronics firms, including Raytheon, Motorola, Admiral, Sentinel, and Magnavox. Due to its involvement, El Rad had extensive involvement with transistors from the very start. El Rad's experience in manufacturing coils was a huge selling point for committee members, given the central importance of the components and related transformers in the new missionary receivers. The manufacturer also met the preference of the committee for flexible production. As a specialty producer, El Rad concentrated on fabricating items that involved extensive engineering know-how in set up. The company also had a subsidiary, Sherwood Electronics Laboratories, which manufactured high-fidelity amplifiers and receivers. El Rad could supply sets in kit form for a savings of roughly 10% (based on minimum orders) and would "include new improvements as we build," according to Voss.⁴ Pretuning receivers did not present a problem for El Rad. Clark

agreed to specially “tune up any group of sets” if conference members specified the exact quantity.⁵

It took committee chairman Thiessen six months to sign a contract with El Rad. Under the terms of the agreement signed in December 1956, El Rad undertook several manufacturing goals, including the “development of one sample transistorized receiver... for use to 7 mc” for \$2,500, four “preproduction samples” at \$87.50 apiece, and a production run of 1,000 units at \$37 apiece (without the cost of cabinet and miscellaneous materials).⁶ Following the company’s earlier bid in October, Clark agreed to develop a final receiver product gradually, as conference attendees had intended in Chicago. The plan called for bread-board model with a final check for specs within three months of signing the contract, followed four weeks later by assembly of five units for field testing, a second subsequent run of 25-50 sets as field demonstration models, and finally an initial production order of 1,000 sets.⁷

Given the relative simplicity involved in developing a broadcast band model and the extensive work already completed by Gilmer and Voss, Thiessen and his fellow committee members expected El Rad to focus its engineering effort on developing a shortwave set within the immediate future. Of the contact bids received by Thiessen, El Rad’s was the only one which had allowed for shortwave by including a separate oscillator. In October 1956, Clark had expressed optimism that he could manufacture a short-wave transistor receiver up to 5 MHz, extending coverage further than conference members had envisioned during their May gathering.⁸ Following a meeting in November, Thiessen and Gilmer gave Clark the go-ahead to begin preparing a receiver for production, but expected Clark to work “almost entirely on the short-wave receiver up to

seven megacycles” rather than on the broadcast band segment of the spectrum, which Gilmer and Voss had already worked up. Clark clearly followed up on this directive. Under the terms of the contract signed on December 11, El Rad undertook to develop a transistor receiver capable of reaching 7 MHz, indicating the set’s early shortwave promise.⁹ When he notified Ray de la Haye with ELWA of El Rad’s contract, Thiessen described its purpose as the “development of our transistor shortwave transistor receiver.”¹⁰

El Rad’s Production Prototypes, June 1956 - March 1957

Despite the costly delay of six months, Thiessen and his fellow organizers had time in early 1957 to develop a customized missionary transistor receiver before commercial rivals. Ray Coddington, an engineer at ELWA, wrote to Thiessen in September 1956 after a meeting with a Philips representative and summarized the state of Philips’ transistor research program. Rather than manufacture transistor receivers, the Dutch company had decided to focus its efforts for the time being instead on “creating a larger market for [its] transistors.” The electronics giant expected to come out soon with an RF transistor, which it planned on marketing in a four-transistor audio unit that could be plugged into the tube socket of its conventional sets retroactively, converting the outdated vacuum components and allowing for quick servicing. The window of opportunity suggested by Coddington, however, proved narrow. In a separate letter the following spring, ELWA engineer Stan Brookman informed Thiessen that Philips had reportedly begun making a nine transistor, three-wave band set, with three times the sensitivity of its battery tube sets.¹¹

Following the design specifications agreed to at the Chicago conference, Clark began construction of a new set of production prototypes, incorporating a modular set design. The pre-production model developed by El Rad consisted of a “basic set” with separate IF and audio sections, to which engineers could add “any front end desired.” As discussed in the previous chapter, the “modular design” of the transistor receiver allowed project organizers considerable production flexibility. Thiessen wrote to de la Haye in January 1957: “Our plans include TRF, broadcast, and shortwave so that we can have anything we want. We can have broadcasts in TRF or in super-het [sic].”¹²

The distinct technical contribution of the committee lay in developing a viable transistor receiver that operated in the shortwave segment of the radio spectrum. The upper-frequency range of the new missionary receivers would be limited by the responsiveness of transistors. Clark and Miller of El Rad remained confident in early 1957, however, that commercial transistors would be available up to 25 MHz at competitive prices within a couple of months, exceeding the reach of any receivers currently used in missionary radio. Clark confided to Thiessen privately in January 1957 that he could count on “twenty to thirty megacycles on our shortwave sets” as a result of industry developments which he considered still confidential.¹³ The two principals at El Rad, Clark and Edward S. Miller, considered that band-switching requested by short-wave missionary radio broadcasters would raise the set price by several dollars, but did not pose a technical difficulty.

By the spring of 1957, production of an inexpensive short-wave transistor receiver appeared a realistic possibility. In February, Clark and Miller demonstrated a “shortwave breadboard prototype” to Thiessen, Voss, Gilmer, and Dave Sheriff of Christian Radio

Associates (CRA). In mid March, Thiessen informed committee members that the price of short-wave transistors had dropped to the point where they cost only slightly more than those for the broadcast band. El Rad had placed orders for parts for 100 demo kits, Thiessen wrote, twenty-five of which were to be short-wave sets tunable up to 25 MHz.¹⁴ Short-wave transistor sets for the mission field seemed to lie on the imminent horizon.

As designated at the Chicago conference, project organizers clearly intended the new transistor receiver for group listening in a missionary setting. Project engineers implemented a set of technical standards designed to maximize volume for community listening, including the use of five batteries on a 9-volt standard, an “oversized” speaker of at least 5” with an extra-heavy magnet (assuring greater resonance), and an audio output of 300-500 milliwatts, almost one half a watt and nearly three times the output of earlier “lunch-box” sets. Unlike commercial manufacturers, which set noise levels at half power,” meeting members agreed to a basic audio quality criterion of “low distortion at full power,” signaling their intent to reach large group audiences with low quality sound, rather than individual listeners with higher-fidelity reproduction.¹⁵

Feedback from commercial engineering consultants at an early stage made it clear that the committee was producing a transistor receiver for a custom niche market. In March 1957, Jack Neubauer, Manager of Communications Systems Engineering at RCA and a supporter of the missionary receiver project, reviewed the design specifications for the “portable transistor receiver.” Neubauer expressed the professional opinion that project engineers had over-designed the receiver for its purposes, compared with standard commercial practice. Design plans called for a carrier-to-noise ratio that was almost four times lower than Neubauer recommended for “general distribution on a large scale for

general use.” The solution for filtering out noise, Neubauer maintained, did not lie in increasing receiver sensitivity, as missionary engineers had assumed, since the set would merely pick up greater levels of noise as well. Instead the answer to reducing distortion lay in adding “effective noise limiting circuits” (or filters) and increasing the signal strength of transmitters. Neubauer strongly recommended that a mass-market receiver contain only four transistors (rather than six), since four would provide adequate audio output and sensitivity as well as keep receiver costs down.¹⁶

Neubauer’s analysis reveals the deficiencies of the missionary transistor receiver from a commercial standpoint. Neubauer felt engineers on the receiver project had over-designed and hence over-priced their product for a mass consumer market. In Neubauer’s view, project managers had not created a mass product, but a custom device for a niche audience of radio users: missionary agencies and broadcasters. If organizers of the receiver project were really interested in producing a low-cost receiver for the masses (as Clarence Jones had originally envisioned), Neubauer suggested an alternative approach. Neubauer described broadcasting as a single “transmitter-receiver system.” The performance limit of a broadcasting system, Neubauer pointed out, was determined by the “effective radiated power” of transmitters, rather than by the sensitivity of receivers. Broadcasters could achieve significant cost savings in receivers, he went on, by increasing transmitter power, thereby reducing the number of transistors required in sets, particularly in the converter through second detector stages of the sets’ circuits. Hence, from Neubauer’s perspective as a communications engineer with years of commercial experience at RCA, it made greater economic sense to solve the receiving problem in the developing world by placing emphasis on the transmitting end of the broadcasting

equation rather than by attempting to enhance the reception capabilities of the receiver itself.¹⁷

Voss, Gilmer, and Bercovitz did not follow Neubauer's admonition to conserve transistors, making it clear that they had a different type of audience and use in mind than those with which Neubauer was most accustomed in the United States. Contrary to Neubauer's professional advice, project engineers had steadily increased the power (and cost) of the missionary transistor receiver in order to enhance its audibility. At the Chicago conference, attendees had settled on a standard of six transistors, an increase of two from the first set prototype sent to Liberia (Model 1MR710). Following the meeting, Bercovitz drew up a new circuit diagram for the receiver as directed, adding a seventh transistor.¹⁸ By June 1957, a year later, all receiver models designed by El Rad included eight transistors, twice the number suggested by Neubauer in his letter a month earlier.

Project Difficulties, April 1957 - June 1957

Despite the optimism of developing a shortwave receiver prototype, serious financial problems, production delays, and cost overruns threatened the future of the project in the spring of 1957, just after it had started.

Funding problems crippled the project at the outset. In April 1957, a year after the Chicago meeting, Thiessen wrote to committee members to raise the thorny issue of project finances a second time, having received no reply to an earlier letter. Thiessen suggested that each of the member organizations represented on the committee contribute the sum of \$500 towards paying El Rad's engineering fee of \$2,500.¹⁹ A reply within a

few weeks from Nat Bercovitz indicated the complex difficulties involved in raising money from the missionary broadcasting community for the project.

Bercovitz had consulted with two leading organizations in the field of international religious broadcasting, FEBC in the Philippines and RAVEMCO. The professional organization of international denominational broadcasters, RAVEMCO represented a rival organization to the more evangelical World Conference on Missionary Radio. FEBC and RAVEMCO hesitated to contribute funds toward payment of the transistor receiver project's engineering for two reasons. First, no universal payment arrangement had been worked out among broadcasting organizations, ensuring equitable distribution of the expense among broadcasters who had differing levels of practical interest in the project. Second, both organizations wanted to ensure that El Rad had fulfilled its contract obligations and had met design specs, which they could not do without actually seeing the prototype models at work. To raise funds, Bercovitz suggested pro-rating the cost of the engineering fee over the first production run of 1,000 sets, an idea shared by several other members of the committee.²⁰ Thiessen strongly opposed the idea. In Thiessen's mind, pro-rating engineering costs would raise the price of initial sets and risk losing support for the project among this critical group from the start:

“Let us not strangle the baby at birth. Too high initial cost would result in unfavorable public reaction, thereby hurting the project at the outset. We should keep cost as low as possible. I'm sure that the lower the cost, the better will be public acceptance.”²¹

Thiessen's response demonstrated his extreme public sensitivity over the project and the determination of the project's visionary to give sets away rather than sell them.

In addition to funding woes, logistical problems significantly delayed production of the missionary transistor receiver from an early point. Under the original contract with El Rad, the transistor committee had agreed to supply numerous non-electronic materials for the receiver, including cabinet, speaker, battery holder, knobs, handles, brackets, clips, and dials. El Rad's contract did not include costs of engineering the battery holder, an important part of the set that required custom design due to the serious mechanical problems caused by battery replacement in the field, described in chapter 6.²² Design of the battery holder would not be finished until late August 1957, when Mayfair Molded Products completed a second drawing of a device which obviated the difficulty of battery buckling through the use of a one-inch, threaded, plastic battery tube with size C batteries. As late as early June, Voss and Gilmer had still not placed an order for speakers.²³ Transistors which Gilmer ordered from RCA in January 1957 were placed on back order until late June due to the construction of new semi-conductor production facilities.²⁴

Ironically, one of the technically simplest set elements, cabinets, proved a "very complicated headache" for the project.²⁵ Though prosaic, the cabinet formed important functions for the receiver, since it acted as a shield, protecting the radio's "innards" from the harsh tropical environment, and as an interface with users. Cabinets had to meet several design criteria. First, set containers needed to stand up in a rugged environment; organizers wanted "a durable box, impervious to moisture, fungus, battery acid, breakage, sunshine, and cold."²⁶ Second, to prevent interference by listeners, cabinets had to "completely enclose the chassis and the speaker, making it tamper proof."²⁷ Third, cabinets had to be inexpensive and likely manufactured in the Chicago area, in order to reduce weighty shipping costs. Fourth, the cabinet had to be large enough to house the

set's components, including an oversized speaker, without crowding. Cabinet design also reflected the importance of pretuning to project organizers, since they contained only openings for two knobs: an On/Off switch and volume control, and a fine trimmer adjustment intended for use on shortwave sets.²⁸

Thiessen personally headed the search for an appropriate cabinet material, though he lacked any knowledge or experience in the area. After conducting extensive interviews with experts at numerous manufacturers and set makers and investigating a wide array of alternatives from scratch (including wood, masonite, fiberglass, aluminum, styrene, and bakelite), the committee chairman finally settled on plastic. By mid-summer 1957, following considerable effort, the committee had spoiled relations with Multiplastics, one of the largest plastics manufacturers in the Midwest, and had made almost no demonstrable progress on the cabinet front in the year since the conference.²⁹

In late May 1957, Thiessen expressed the generally held sentiment that the project was running behind schedule as a result of not allowing adequate time to order parts. In an effort to speed up development, El Rad agreed to produce 100 preproduction sets for field testing, instead of the original 50 demo sets.³⁰ Miller notified Gilmer, however, that the cost of hardware, clamps, knobs, and dials had driven the price of sets up from the original \$35 quoted by El Rad to over \$40 for both broadcast band and short-wave models. Gilmer arranged to wire the first 100 broadcast band sets himself, since the work was not covered in the original El Rad contract, producing a further labor bottleneck for the project.³¹

Project difficulties came to a head in the early summer. On June 9, Clark supplied Gilmer and Voss with broadcast-band and shortwave prototypes as stipulated in the

contract six months earlier, a year after the Chicago conference and six months behind the original target date set at the conference.³² Meanwhile, Miller had ordered parts to manufacture 100 eight-transistor, “all band broadcast” sets, 1,000 “limited band broadcast” sets, and 1,000 short-wave sets.³³ On June 10, Thiessen wrote Gilmer to inform him that the project had promptly run out of money: “The treasury is empty.”³⁴

Though it had taken more time and produced a more expensive receiver than contracted, El Rad’s engineering experience and expertise had paid off for the missionary receiver project in two ways. Clark and Miller had succeeded in enhancing the performance of the company’s prototypes over the experimental “lunch box sets” first developed by Gilmer and Voss. Gilmer and Voss strongly endorsed the performance of the El Rad broadcast-band model, expressing their conviction that the project now had a technically superior product. In Gilmer’s view, the set went “far beyond all that we had hoped for,” considerably exceeding the original specs provided by the Chicago conference. Voss said the sample receiver was “very good” and that it “sounds and handles better than anything we have had so far.” Such high performance may not have been an undivided blessing for the receiver project, since it meant higher prices and involved time-consuming delays. Costly high-performance quality indicated that organizers of the project had a niche group of missionary users primarily in mind rather than a mass or low-income market.

Though not as conclusive, the shortwave set which El Rad engineers developed looked equally promising. Incorporating advances in semiconductor research that extended the responsiveness of transistors into the high-frequency region, Clark and Miller succeeded in producing a successful shortwave missionary transistor receiver

protototype. A cutting-edge technical frontier, the results on the new short-wave receiver remained as yet inconclusive; Gilmer and Voss were in the midst of comparing the new set's performance with a Pye set used by SIM and brought from Africa to Chicago by Thiessen.

Development of a shortwave transistor set may have cost the project dearly. Gilmer astutely identified that shortwave development work constituted a potential time-bomb for the project. While design work had gone predominantly toward producing a shortwave receiver in greater demand by missionary radio users, project organizers had attempted to include the El Rad engineering fee (still unpaid) in the broadcast-band set, whose work had been largely completed by Gilmer and Voss, thereby raising its cost above \$40. "We have been failing to realize that the engineering cost was for short wave to a large part," Gilmer wrote, "and we are trying to write it off on the broadcasts band sets."³⁵

Uncertainty over future funding continued to hang above the transistor project throughout the summer of 1957. In early August, Thiessen traveled to Holland, Michigan to meet with Robert Vander Hooning, demonstrating the project's final pre-production broadcast-band receiver. Vander Hooning responded that he was "thoroughly satisfied" with the model, which he considered the "greatest missionary advance anywhere in the world today." The businessman fully endorsed the project and pledged to be a "steady supporter" during the next manufacturing stage by helping with the initial production order. Unfortunately, however, Vander Hooning had already tied his money up sponsoring a color television series with Donald Barnhouse, the well-known conservative Presbyterian preacher in Philadelphia, and so could provide little immediate help.³⁶ By

late September 1957, the transistor committee had not placed a production order for the sets with El Rad and Thiessen began to express a sense of urgency.³⁷ In order to procure materials, Clark expected payment of half of the production order, which amounted to a sizeable sum. As of mid-November, the committee had still not placed a formal order due to an inability to pay El Rad's set-up fee.³⁸

Meanwhile, Voss and Gilmer occupied themselves with assembling demonstration sets for use in field testing overseas. Since El Rad had previously ordered parts and since Voss and Gilmer assembled sets by hand, no major expenditure was involved in this stage of project operations. Voss completed the first 25 shortwave demonstration sets by September. Voss planned to send out superhet short-wave demo sets to roughly the same seven missionary broadcasters who had earlier tested the project's broadcast-band TRF sets: ELWA, HCJB, CP27, 4VEH, TIFC, TGNA, and DZAS (FEBC). All seven stations employed frequencies within a narrow range on the 9 MHz band, simplifying the task of pretuning demo sets for engineers who could use a single tuning coil. As a technical solution to the problem of pretuning shortwave sets in the field, demo sets included two bands and a bandswitch mechanism. El Rad had pretuned sets on 9 MHz on "Band 1" in the factory. Stations could make field adjustments for any desired frequency up to 10 megacycles, the limit of the set's tuning coil, and could individualize sets by choosing a second lower frequency on Band 2, which they could set up for themselves.³⁹ By late October, roughly thirty experimental short-wave sets had either been shipped or were in use.

Voss and Gilmer shipped even greater numbers of demo broadcast-band sets to missionary users around the world. By mid-November 1957, Gilmer had "basically

finished” 80-100 broadcast-band AM sets. In order to expedite production and facilitate distribution to a wide variety of testing sites around the world, El Rad had not fixed the tuning on the coils for these sets. They therefore waited to be “tuned up” by Gilmer and placed in cabinets before being shipped to the mission field. Nearly three-fourths of the pre-production run of broadcast-band sets went to Liberia. By the end of 1958, ELWA had placed a cumulative total of 67 pre-tuned transistor sets in the field (including earlier “lunchbox TRF sets), pre-tuned to the station’s long-wave service.⁴⁰ Demand in West Africa was so great for the new transistor receivers, and the station’s waiting list so long, that ELWA’s Ray de la Haye ordered 400 medium-wave sets in advance from Thiessen for use in Liberia in anticipation of a production run.⁴¹ SIM’s Ray Davis in Nigeria requested an additional 500 shortwave sets with public announcement features for distribution among missionaries in the region.⁴²

Tensions with the Nigerian Mission Field, 1957

Relations between project engineers and high-level SIM executives in Nigeria during 1957 demonstrated how difficult it was to build a receiver at home that could be used effectively in the mission field. Tensions also revealed that, while project organizers and mission agency officials shared the common goal of evangelizing the world through radio, there were major disagreements between the two parties on questions of missionary strategy and tactics.

As outlined in chapter 6, SIM officials had acquired a major interest in the radio market of Nigeria, the historical hub of their activity. As SIM officials attempted to expand its broadcast operations in the country, the issue of receiver sales brought them

into direct conflict with the organizers of the missionary transistor receiver project in the person of Abe Thiessen. In January 1957, Ray Davis, the Field Director of SIM in Nigeria, questioned the viability of receiver distribution in West Africa. Davis felt that the price of \$35 which the transistor committee had agreed to pay El Rad was “far above the ability of these people [in Nigeria] to pay.” While he anticipated a “wonderful day” when sets could be made widely available in Nigeria, he maintained that prices would have to drop as low as \$8-\$10 before many would sell.⁴³

Thiessen responded to Davis’ concern a month later by reiterating his original vision for the missionary transistor receiver project. Like Davis, Thiessen opposed the sale of sets at current prices to Africans. He did so, however, for an entirely different reason - not because such radios would be too expensive, but because the sale would spell a loss of control for missionary broadcasters over how listeners used their sets. In Thiessen’s view, project organizers had always intended to give receivers away free, just as they broadcast their programs without charge over the air. Thiessen stated clearly that his goal was not to market radios to African listeners, but to rationalize the purchase of sets to American conservative evangelical donors who would pay for them:

“We have never been concerned with the economy as seen from the African standpoint. Rather, we are interested in the over-all economy of the project to the Lord’s people.”

Thiessen’s response made it clear that he expected conservative evangelical Americans (not indigenous Africans) to finance a large-scale distribution of sets. To do so, Thiessen favored adopting the set placement approach which ELWA had implemented successfully in Liberia, lending sets to “responsible” applicants whom missionary stations screened and keeping close records of set location.⁴⁴

Thiessen's letter prompted a response in June 1957 from Guy W. Playfair, the General Director of SIM, indicating that issues surrounding receiver use had reached the highest level in the mission agency.⁴⁵ After having consulted with John Wiebe, Acting Field Director, as well as the Jos Office and District Council, Playfair expressed a general view that adamantly opposed giving away sets. "We cannot conceive of giving these sets to Africans," Playfair wrote, except to the very poor.

Playfair provided several powerful arguments for the opposition of SIM's leaders to giving away receivers to Africans. First, SIM could not afford to finance the operation, which would cost the "staggering sum" of one million dollars in total. In Playfair's estimation, tens of thousand of African listeners could afford to pay for sets more easily than SIM could. Second, unlike Liberia (where the government waived import duties for ELWA on all broadcast equipment), radios imported into Nigeria would enter as commercial goods subject to import tax, irregardless of who received them and the means by which they were distributed. Third, giving away sets would not resolve the problem of control: "Not one of us know of any way to control radio sets, even though given free." As discussed at length in chapter 6, Playfair openly doubted that Nigerians, particularly in Lagos, would tolerate pretuned radios. Fourth, in Playfair's view, Thiessen's approach to receiver distribution would violate SIM's indigenous policy, contradicting "the Mission's whole set up,..." Formulated by the agency's founder Roland Bingham in 1900, "long before broadcasting was born," and a guiding principle for the organization's activity throughout the African continent over the following half a century, the policy stated that the African church should support itself as a "responsible institution." Hence, Africans should purchase their own radios, just as they did trucks, cars, taxies, and other

commodities. Differentiating between transmitters and receivers, Playfair argued that the “setting up of a broadcast” lay beyond the means of the local church, but that receiving sets were “within the reach of nearly all villages.”

Thiessen’s reply in September 1957 indicated the gulf that lay between perception of the receiving problem at home and in the West African mission field. Thiessen expressed his support for SIM’s indigenous policy, arguing that it constituted “an underlying principle of the Transistor Receiver Project.” Thiessen argued, however, that the indigenous principle applied only to the National Church and not to areas where no church existed yet. In these frontier areas that awaited evangelization, Thiessen maintained, it is “we as the Christian church at home,” and not the indigenous church, which pays for the “many tools of evangelism,” such as mission stations, hospitals, print facilities, radio broadcast stations, and the upkeep of missionaries themselves. In Thiessen’s view, radio sets fell in the latter category. The transistor project had considered selling sets, but had decided against it, since the sale of receivers excluded “vast areas” beyond “civilization,” where people had no income and commercial sets were not available. Thiessen ended on a conciliatory note of compromise, offering to place sets in these “unreached areas” where people could not get sets, while allowing listeners with access to markets to buy receivers commercially.⁴⁶ It is in this context that the shift in the transistor project’s motto from “A radio in every village” to “A radio in every *unreached* village,” which took place during this time period should be read.

The correspondence between Playfair and Thiessen indicated profound philosophical and institutional differences between the chairman of the transistor receiver project and SIM mission officials. Playfair and Thiessen had largely different markets in

mind, urban Nigeria and rural Liberia. In addition, they had differing visions of radio and of the respective roles of the American and African churches in missionary radio broadcasting. Playfair viewed radio receivers as commodities like any others and willingly ceded control over receiver usage, relying on commercial distribution and on the indigenous church to supply sets. Thiessen, on the other hand, continued to distinguish radio receivers as a separate “ministry” of evangelism in remote areas, which required and facilitated the control of the home church in the United States over receivers. Rather than commodities, Thiessen viewed radio receivers as part of broadcasting’s infrastructure – possibly because of the considerable development costs associated with the missionary transistor receiver project, but also because conceiving them in this way facilitated North American control.

Pretuning Shortwave Radios, 1957

Thiessen’s correspondence in 1957 with ELWA’s technical staff highlighted difficulties in a second area: pretuning. Pretuning posed considerable political problems in Nigeria, as detailed in chapter 6. During early 1957, technical difficulties of pretuning in West Africa now developed alongside political ones and proved more ominous for the future of the missionary transistor receiver project world-wide. A SIM official at the SIM District Superintendents meeting raised prescient technical concerns as early as December 1956 about the “accuracy” of pretuning on shortwave over long distances, particularly when several stations with strong signals and jamming signals interfered with ELWA’s frequency.⁴⁷ Feedback from ELWA technical managers during 1957, based on

continued testing with the project's first broadcast-band "lunchbox" sets, demonstrated how difficult it would be to design shortwave sets with a pretuning feature in the future.

Based on their experience with older "lunchbox sets," ELWA officials provided the transistor committee with feedback early on concerning enhancements to the pretuning capability of the future shortwave model. As stated earlier, Ray de la Haye and Henry Hungerpilller had ordered 400 transistor sets in September in anticipation of the committee's first production run. The two engineers, however, suggested not one, but three different types of pretuned sets to reach ELWA's multiple listening audiences in different parts of Liberia. The simplest set, providing local broadcast band coverage, would be preset to ELWA's long-wave frequency of 710 KH. A second hybrid set, "for those located on the fringe of the broadcast band," would require band-switching and combine broadcast band and 60 meters, while a third purely short-wave set with 25 and 31 meter bands would enable ELWA to reach listeners in Nigeria, since the station switched bands in its afternoon and evening broadcasts.⁴⁸

Pretuning was not a technically straightforward matter for missionary broadcasters such as ELWA. As discussed in chapter 6, pretuning posed numerous technical challenges for missionary broadcasters on shortwave, due to stations' use of multiple wavelengths for different services and the need to constantly shift broadcast frequencies in response to interference and changes in atmospheric conditions. In order to improve the pretuning capability of the committee's shortwave receiver prototype, De la Haye and Hungerpilller suggested two design improvements. First, stations such as ELWA needed to combine fixed tuning with band-switching capabilities in receivers and to pretune multiple frequencies: "Due to the fact that we are constantly shifting

frequencies to find a clear channel, it would be advisable not to manufacture a set to one specific frequency.” Second, pretuning needed to be adaptable rather than pre-set at the factory, enabling broadcasters and technicians to continue responding flexibly to frequent changes in local atmospheric conditions without losing the benefits of fixed reception. To do so, station technicians at ELWA preferred that “internal tuning arrangements” made at the factory cover the entire radio band (rather than a narrow portion of the radio spectrum), since this would allow staff to adjust pretuning more freely in the field if the station decided to swap wavelengths.

ELWA’s Chief Engineer Herschel Ries voiced concerns to SIM’s Ray Davis in October 1957, which he later passed on to Gilmer and Voss, about the feasibility of pretuning a shortwave prototype. During the previous six months, ELWA had resorted to frequently shifting frequencies in order to find a clear broadcasting channel into Nigeria, altering between its four shortwave frequencies: 12, 25, 31, and 60 meters. During a staff meeting with Ries in October, ELWA’s technical staff therefore expressed a desire for shortwave sets with at least three bands and, ideally, one that they could tune across the entire shortwave spectrum. Based on ELWA’s difficulty getting into Nigeria, Ries reached a sobering conclusion about the prospect of fixed-tuned reception on long-wave versus shortwave: “On long wave, here in Liberia, the pre-tuning will work, as far as we can now see, but not for the short wave sets, in most of Africa.”⁴⁹

Faced with imminent complications of pretuning the committee’s new short-wave receiver, Thiessen began a delicate balancing act as the transistor project’s chairman. In public, Thiessen continued to defend the practice of fixed circuitry, which provided a strong selling point for his program to American conservative evangelicals. The

rhetorical power and imaginative appeal of pretuning provided an important glue that held the coalition of interests built around the missionary transistor receiver project together. In private, however, Thiessen and Voss began to seek out practical alternatives that would facilitate receiver control on the shortwaves.

In the summer of 1957, Voss privately suggested to Thiessen that the transistor committee could meet its overall objective of “a set in every village” through the use of three different types of receivers. In addition to pretuned receivers set to M.R. stations, locally coordinated “band tune sets” could also be used. These sets would have to be “carefully placed in the hands of a native Christian who will see to it that the missionary radio signal in the language of the people will get through at the right time.” Finally, unregulated band tune sets could pick up a range of signals, including the missionary station.⁵⁰ The latter two types of sets would require continued reliance on local personnel to operate sets properly. Thiessen had devised a similar solution to the problem of pretuning, which allowed human agents to act as filters, substituting for technical imperfectability. Broadcasters could tune the sets to one or more bands and rely on missionaries or native Christians to “use... this tool” properly. Voss considered this type of social arrangement which relied on local personnel to coordinate set usage “a sort of external pretuned deal.”⁵¹ By endorsing a modest return to “human” pretuning, Thiessen and Voss implicitly recognized that radio reception – even of a fixed tuned variety – was not only an important technical practice, but at heart a mutual social and technological construction.

Justifying the Missionary Transistor Receiver Project, ca. July 1957

The executive leadership of SIM had entrusted Thiessen as ELWA's co-founder and Home Secretary to oversee the development of an inexpensive receiving option for the mission agency, which they agreed to partly subsidize. In a brief memo in June 1957, M.A. Darroch, the Home Director for SIM, stated explicitly that he expected Thiessen to exhaust all commercial options for a shortwave set before undertaking production efforts of his own:

“I am depending on you that every source of possibility is investigated so far as radios that may be on the market for sale, without us going into the building of them ourselves and having to have a large lay-out, etc. As I understand it, there is nothing on the market or likely to be on the market for some time in the short-wave transistor and thus we are almost forced to build our own if we are going to have it.”⁵²

Darroch's memo demonstrated that SIM executives wanted a short-wave receiver, but that they looked to commercial sources first before taking on the cost and responsibility of producing a receiver themselves, which they viewed as a last resort. SIM leaders endorsed Thiessen's project based on their explicit understanding that no viable receiver alternative existed on the foreseeable horizon in the summer of 1957.

Coincidentally, a week earlier, Hank Voss had contacted Thiessen, suggesting he gauge the commercial American receiver market to reassure the two men that no viable radio alternative to their project currently existed. Voss had compiled a list of the major receiver manufacturers in the United States from a directory in the trade magazine *Electronic Industries*. He advised Thiessen to inquire discreetly from sales departments “what is available or about to become available” and then to “thank them off with another short letter.” The tone of Voss's admonition made it clear that Thiessen's purpose in

writing would be purely defensive – namely, to protect himself from future criticism that he had not adequately explored the commercial market.⁵³ Following receipt of Darroch’s memo eight days later, Thiessen followed Voss’s instruction to the letter, writing on July 17 to twenty-nine different American companies, including the major radio manufacturers Admiral, Arvin, De Wald, Heath, Hallicrafters, Philco, RCA, Regency, and Zenith.⁵⁴ Thiessen identified himself as a representative of missionary broadcasters around the world who constituted “potential large users of a good transistor receiver” on both the broadcast and shortwave bands.⁵⁵

Thiessen and Voss’s industry survey appeared to validate their claim that no commercial shortwave transistor set comparable to missionary models existed in mid-1957. Voss and Thiessen eventually received twenty-four responses from companies, covering some forty different portable and pocket transistor radios. Of the forty transistor sets, roughly half were overly-miniaturized pocket-size models. The other half included six transistor table models and a dozen portable sets, which Voss considered “quite small” for missionary usage. Of the portable transistor models which most closely matched the missionary transistor receiver, all but one had less than the missionary receiver’s eight transistors. Nearly all forty transistor models surveyed covered the broadcast band; only two radio manufacturers planned shortwave transistor receivers. Of these, Zenith indicated its model would be quite expensive, while Regency (the original inventor of the first AM transistor radio) had open-ended intentions to “market one in the future.”⁵⁶ Reviewing the sales literature received, Voss concluded that he and Thiessen had weighed up the commercial market accurately: “If we take into account the pretuning problem, the battery problems (type, accessibility, foolproof connections, etc.), the

speaker size and available output, cabinet material, ease of servicing, performance at reduced voltages, tropicalization, and sensitivity requirements; it is easy to see there isn't much to choose from."⁵⁷ Survey results appeared overall to confirm the founding premise of the transistor receiver project's organizers: by mid-1957, as the project neared production, American commercial firms had yet to build an affordable (under \$40), battery-powered, portable, durable, transistorized shortwave receiver.

Through the remainder of 1957, Thiessen stood by his claim that commercial firms still had yet to produce a shortwave transistor. Thiessen responded to a request for a shortwave transistor set from a listener in India in August that, while commercial transistor sets existed on the AM band, commercial companies did not produce any shortwave sets.⁵⁸ In December, Ray Davis notified Thiessen that Philips of Holland had produced a transistor set and claimed the Philips product was superior to the El Rad shortwave set which he had recently tested for Thiessen. Thiessen responded that he had not heard of the Philips radio (since it was not manufactured in the United States and lay outside the scope of his survey), but argued that Davis could not compare the two receivers, since the demo set was shortwave, while the Philips transistor receiver only operated up to 4 MHz. In Thiessen's view, Philips had not yet addressed the "high frequency or short-wave problem," which he considered the crux of the whole matter in transistor research."⁵⁹ Thiessen thus identified the production of shortwave transistor receivers (rather than broadcast band radios) as the distinctive hallmark of the missionary transistor receiver project.

Funding Struggles, January - May 1958

In early 1958, Thiessen's relations with SIM's leadership reached a near breaking point over issues of finance. During a January 1958 meeting with Darroch, Thiessen explained that the transistor receiver project was ready to place a production order. To do so, El Rad required a minimum order of 1,200 sets and a 50% advance of \$25,000 as a production set-up fee. Darroch informed Thiessen that SIM did not have the funds to advance Thiessen, but agreed to contact Ray de la Haye at ELWA to inquire whether the station would consider advancing funds set aside by the station to purchase a new 20 Kw Gates shortwave transmitter, to be replenished following sale of the sets.⁶⁰ According to De la Haye, the technical staff at ELWA unanimously opposed using transmitter funds to finance the first production order of transistor sets.⁶¹

Thiessen appealed immediately for project funds to the new General Director of SIM, Dr. A.D. Helser. In a pair of letters, Thiessen attempted to persuade Helser to subsidize the fledgling project. In February, Thiessen defended his project as a direct provision from heaven: "I am thoroughly convinced that this is of God..." As a divine mandate and sacred trust, the project called for a bold response in faith on the part of conservative evangelicals interested in missions. Yet Thiessen decried the timidity and lack of boldness in the conservative evangelical community, which was "holding back and causing delay." While missionary societies and broadcasters had pledged support and agreed to place small orders, they refused to advance funds, preferring to publicize the project and wait for funds from the general public: "The interest and response of sister societies has been excellent but they have not been handing over any great amount of money." Thiessen did not spare the leadership of SIM from his criticism. Officials had

pledged their support from the start: “Our Mission has encouraged me to go ahead and has given full assurance of complete backing in the entire project.” Yet SIM’s leaders now notified Thiessen that they had no money, cruelly disappointing him and betraying his trust.⁶²

In the winter and spring of 1958, Thiessen clearly expected that the transistor project would have no commercial competition for some time to come. Thiessen informed Helser in February that no economical receiver alternative from industry would likely exist “for some time to come.”⁶³ Writing to Darroch in April, Thiessen expressed buoyant optimism about the future of the project, given the state of the commercial receiver market. Thiessen expected that within a few years “God would have us manufacture and distribute hundred of thousands of sets.” To handle this expected mass demand, Thiessen recommended creating an ambitious new organization that would relieve him from the burden of managing the project alone. A non-profit, non-denominational organization, the “Transistor Radio Corporation” would function as a central clearinghouse for receivers and would contain six departments: Customer Relations, Manufacturer Relations, Public Relations, Shipping, Field Relations, and Research. Though never implemented, the draft plan submitted to SIM’s director indicated that in the spring of 1958 committee members anticipated significant demand for transistor missionary receivers and did not expect significant commercial competition for the foreseeable future.⁶⁴

SIM’s executive leadership received Thiessen’s proposal coolly. Darroch, Playfair, and others had a vastly different view of missionary activity as part of a process of “indiginization” and a markedly differing outlook on how to conduct missions by radio.

In the short term, given the low level of purchasing power in developing countries such as Nigeria, Darroch and others expected the distribution of transistor receivers to be subsidized through SIM funds, as well as funding from foundations and businessmen: “We do not see how this could be done otherwise than to subsidize radios.” Darroch believed that two separate sources would eventually solve the receiver problem over the long term. First, unlike Thiessen, Darroch expected that commercial firms would shortly jump in to produce receivers if missionary bodies demonstrated the existence of a market. Darroch welcomed the prospect of commercial sets as a “cheaper ministry to get the gospel out” and he cautioned against over-expanding SIM’s private efforts and creating a large organizational structure to manage the agency’s receiver program. Thiessen’s ambitious proposal for a transistor receiver, therefore, never even made it off Darroch’s shelf. Second, SIM’s Home Director suggested that African Christians might finance receivers in order to hear programs in their own tongue: “Might it be possible that the African church themselves would be interested in supplying some of these radios to villages of their tribes or adjoining tribes?” Darroch expected in 1958 that the ultimate solution to the “receiver problem” would come through commercial production and the distribution of receivers by indigenous groups, rather than through Western patronage and subsidized handouts by North American missionaries.⁶⁵

Testing the Shortwave Set, October 1957 - December 1958

Development and testing of a shortwave receiver posed a considerably more daunting set of technical and logistical challenges than the earlier experimental “lunchbox” TRF sets. Development of short-wave coils did not pose a problem for

engineers.⁶⁶ Unlike broadcast band models, transistors rather than coils proved the critical design component for shortwave missionary receivers. Shortwave reception on high-frequency transistors comprised a new area of research for radio engineers in which no clear, previous standards existed, requiring an experimental approach. “We didn’t know what could be done,” Gilmer wrote Thiessen, “or if there is any standard for transistor S.W.”⁶⁷ Logistics also posed a greater challenge for testing short-wave sets than for AM receivers. Since field personnel had to test shortwave sets for long-distance reception, ELWA technicians had to travel greater distances to conduct tests. Project organizers had to reach beyond ELWA station workers in Liberia to collect data, turning to SIM personnel in Nigeria and missionary stations around the world. As they moved away from ELWA’s compound in Monrovia, however, Thiessen and Gilmer received far more intermittent and unreliable feedback from field testers.

Early test results on the new shortwave prototype were not promising. El Rad produced the first shortwave experimental sets in June 1957. Voss and Gilmer compared the prototype with Pye shortwave sets which ELWA had purchased and placed in Nigeria.⁶⁸ Initial domestic testing results proved disappointing. Gilmer admitted that, under pressure to move the project along, engineers had set aside specs on the short-wave model agreed to at the Chicago meeting “in order to get something done.”⁶⁹ Voss had mailed out the first short-wave demo sets overseas in September. Initial field response in October 1957 proved little more promising than immediate tests conducted at home. Writing from Nigeria in December 1957, for example, Field Director Ray Davis complained of high noise level and static on his shortwave test set.⁷⁰

By the winter of 1958, Voss and Gilmer apparently made significant design improvements. Thiessen informed Davis that the noise and static problems he reported had been remedied in subsequent sets.⁷¹ In February, Ray de la Haye notified Home Director Darroch that he was pleased with the performance on the experimental shortwave sets, which picked up several shortwave stations. Davis had requested four additional sets for testing in Nigeria, which an incoming missionary family from the United States brought to Jos by May. According to Ray de la Haye in Liberia, the sets “performed beautifully” at first, picking up ELWA clearly on its 25 meter service.⁷²

Such a sanguine verdict, however, proved premature. Derek Porter, a young SIM missionary and street evangelist located outside Ilorin, Nigeria in the country’s Western region among the Yoruba people (mentioned in chapter 6) had also received a shortwave test set by the fall of 1958. In Porter’s eyes, the pilot receiver contained tremendous evangelistic potential as “a terrific means one can use to get out the Gospel.” Porter wrote to Tom Gilmer in September 1958 lauding the set’s “amazing volume,” in accordance with the high-audio performance standards engineers had designed into the receiver.

Porter proved a valuable source of detailed information on set usage. Despite his unabashed enthusiasm, Porter encountered major reception problems with the pilot short-wave set. Porter complained of a “piercing whine” (“a heterodyne”) on 25 meters. Porter believed the noise was not due to the set, but resulted from crowded interference on the popular high-frequency waves, since Porter picked up the BBC’s world service and French stations, which broadcast simultaneously on 19, 25, and 31 meter bands. Porter had been informed that the use of a frequency changing device would fix the reception problem, but at the daunting cost of \$1,000. In order to enhance fine tuning on the set,

Porter recommended to Gilmer that engineers add an internal trimmer: “Because there are so many stations on about the same frequency I need to constantly tune the external fine adjustment else other stations begin to pull in louder and drown out ELWA.” Porter took the set into Ilorin for street evangelism, plugging in an external speaker to broadcast ELWA’s Yoruba programs. Yet reception difficulties hampered his effectiveness: “The people say they hear it well but at 5:15 or 5:30pm there is much other station interference and I need to keep my hand on the fine adjustment most of the time”⁷³ Porter also indicated the complexity of properly adjusting shortwave antennae. When using an 8.5’ aerial outside, Porter reported that the set “sounds like a birdhouse” due to excessive sensitivity. The young missionary requested advice from Gilmer on the proper length for an external aerial that would match the wave band spread of the set.⁷⁴

Difficulties with test shortwave sets placed in Nigeria grew in October 1958 to the point of breakdown. Porter could not pick up morning language broadcasts (from 7:00-7:30am) on 19 meters on the transistor radio and reported that afternoon reception on 25 meters was also “very poor.” Porter’s set had lost most of its volume. Worse, the Ilorin missionary reported that the four sets in Jos “all have gone wrong.” Thiessen could do nothing to fix Porter’s set, except recommend that he send the set back via a missionary for repair in the United States.⁷⁵

Difficulties with the new short-wave prototype should, of course, be placed in perspective, since problems with reception performance plagued all short-wave receivers during the period. High-frequency transistor response represented a “cutting area” of industrial research on semiconductors in 1958 and it is unlikely that commercial firms had resolved the difficulties which missionary broadcasters encountered either. In fact,

the missionary transistor receiver likely fared better than its commercial counterparts. Herschel Ries considered the set a “real advance” over cheaper commercial sets, offering superior sensitivity.⁷⁶ According to Derek Porter, a Marconi engineer in charge of a nearby VHF Repeater Station reviewed the missionary transistor short-wave receiver and commented that “there was nothing like it in Britain for volume and quality of reception.”⁷⁷

Yet field testing of the short-wave demo sets in 1958 illustrated how deeply dependent Thiessen, Voss, and Gilmer were on the field for design data. Almost all feedback on the experimental short-wave set in West Africa came from SIM representatives in Nigeria rather than station workers in Liberia. Despite high hopes, project organizers had received almost no feedback on shortwave sets from “the men at ELWA” by the end of 1957, depriving Thiessen of his most reliable source of field data on earlier “lunchbox” sets. Short-staffed, ELWA personnel found it hard to free up time for testing. Yet without field data, Thiessen complained, the transistor committee was “working in the dark.” Thiessen expressed his despondency openly:

“On many points, we are either without any information or completely misinformed. We have no way of knowing what field conditions or field problems are except as we hear from the field.”⁷⁸

Furthermore, Thiessen knew little about commercial development of transistor sets overseas. He learned from Davis in Jos, not ELWA staff, that Philips had developed a transistor set.

Feedback on demonstration sets only diminished further for Thiessen and his colleagues outside Liberia. In late 1957, Thiessen sent sets to various sites around the world, including Korea, Formosa, and South America. Nearly a year later, Thiessen had

not heard a word from locations around the world. Thiessen complained of the impact the shortage of field results had on design engineering: “We are so sadly lacking in field data that we are often at a complete loss in our consideration of certain design and circuit features.” Chapter 6 recounted how a Wycliffe engineer in the South American rain forest not untypically let a test set sit idle for eight months without using it because he could not figure out how to install batteries.⁷⁹

The First Production Run, June 1958 - March 1959

As the project finally neared production in the summer of 1958, Thiessen became increasingly aware that the receiver’s modular construction design caused serious problems. As of early 1958, the committee could provide an impressive array and combinations of fourteen different set types, including broadcast- band and short-wave sets (each with or without p.a. and phonograph features), TRF and superhet sets, crystal-controlled sets, band-switching sets, and communication sets. The committee contemplated several different production models: the “Companion,” a small long-wave set with limited application for less than \$20; the “Messenger,” a broadcast or shortwave set for \$25 with a smaller speaker that could be used for small groups; the “Villager” at \$40, a set available in either broadcast-band or short-wave designed for large groups; and the “Missionary,” a “Villager” with p.a. and phono features and external speaker for an additional \$25-\$30.

The requirement of pretuning also posed production challenges by significantly fragmenting the missionary radio market. Thiessen made these difficulties clear to a group of missionary radio practitioners at the annual 1958 gathering of the World

Conference on Missionary Radio. Different broadcasters, Thiessen stated, defined tuning requirements differently:

Some want pre-tuning or fixed tuning “right on one frequency so you cannot shift it even a little bit. “Others want a little segment on a little band.” “Some want several bands.” “Some want several places on the band.” “Some want a whole band.” “Some want several bands.” “Some want several spots on several bands.” “Some want combinations of shortwave and broadcast”⁸⁰

In private, Thiessen queried the definition of pretuning itself: “What is meant by a pretuned set? How pretuned must such a set be?”⁸¹ While he continued to publicly stress the importance of pretuning, behind the scenes Thiessen played the feature down in order to move the receiver project forward. Taken together, the need to settle on a single production type and the challenge of standardizing pretuned receivers posed significant obstacles to mounting a large production run.

By June 1958, the missionary transistor receiver project had undergone important changes. Tensions with El Rad that had been building for an extended time, combined with limitations and strains posed by Thiessen’s personal style of project management, led to financial and organizational alterations with consequences for the future. Confronted with the committee’s inability to raise the company’s set-up fee and members’ dissatisfaction with the increased cost of the receiver (now over \$40), Thiessen and Voss made the decision to switch manufacturers. Thiessen began negotiating with Service Instruments Corporation (“Sencore”), another electronics manufacturer in Chicago, to produce the transistor receiver. Discussion with the new General Director of SIM, A.D. Helser in July 1958 led to an agreement to scale back the committee’s first production order to 500 sets. In August, Thiessen placed an order for 500 Villagers with Sencore, designating 350 sets for SIM and 150 for other mission agencies and

missionaries who had advanced funds up front for receivers. Various production delays involving logistics and parts suppliers then pushed the start of production back into early 1958.

In the face of these developments, the transistor committee held its third meeting on February 17-18, 1959 in WMBI's transmitter building, located in Addison, Illinois (close to the campus of Wheaton College). Attendees included five individuals: Thiessen, Voss, Gilmer, Tom Sorrels, now of Missionary Engineering Corporation (MEC), and Jack Downie of General Electric, who had recently given 5,000 free transistors to the project. Thiessen reported that he had signed a contract with Sencore, which expected to produce 500 broadcast band and shortwave sets by April 1. While the committee had paid the initial one-quarter down payment of \$6,000 out of advance orders, the balance of \$18,000 would fall due when the run finished. To come up with money, Thiessen was relying on proceeds from sales of sets to a wide array of missionary users. Thiessen informed the group that SIM wished to withdraw from handling the financial and bookkeeping functions of the project following the production run, capping a long history of skepticism about the project's value among the agency's executive leaders.⁸²

Members voiced their conviction that industry still did not meet the needs of the missionary market in early 1959. To support their claim, they cited several shortcomings of current commercial receivers, reiterating the claims made by Hank Voss at the original 1956 meeting in Chicago. Members believed the committee could still compete with industry and enumerated its principal advantages: limited staff and overhead (only one full-time employee), inexpensive distribution channels (Missionary Equipment Services had recently agreed to distribute sets for a 5% charge, compared with the 30-60%

commercial firms paid to market products through distributors and dealers), and a network of contacts in both the corporate and missionary radio fields.⁸³ Thus, committee members felt a clear rationale for the project still existed.⁸⁴

Before departing, the transistor committee closed their third meeting in Chicago with a series of aggressive expansion plans for the future. Following SIM's decision to withdraw its support and Thiessen's desire to return to full-time missionary work, the committee decided to create a "Transistor Corporation," similar to the organization Thiessen had proposed earlier to Darroch. The committee also outlined an ambitious set of production goals, including an immediate contract with Sencore for 1,000 more Villagers (with a continuous production run of 100 Villagers per month thereafter) and engineering a pre-production run of smaller Companion models within 18 months.⁸⁵

The 'Villager,' April 1959

The transistor committee's success in producing small quantities of an actual receiver resulted from a unilateral executive decision taken by Thiessen in early 1958. As early as January 1958, Thiessen had expressed the view that organizers needed to boil down the number of set types and models it could produce: "It is necessary to pick a few types and standardize."⁸⁶ In order to lower set-up costs, Thiessen took the decision with Sencore to limit the "modular design" of the receiver, reducing the number of possible receiver circuits from fourteen to one.⁸⁷ Based on orders he had received in the mail, Thiessen chose the 'Villager' as the model with the widest possible appeal among missionary users. Since most missionaries requested p.a. system sets, Thiessen

determined to have the feature built into the entire production order, allowing only for broadcast or short-wave model variations.⁸⁸

As a result of Thiessen's precipitous move, nearly three years after their Chicago meeting and over five years after the project began, the committee finally produced more than a few handfuls of missionary transistor receiver prototypes. The apotheosis of over five years of hard labor, the "Villager" had an unremarkable demeanor that hardly betrayed the amount of engineering effort and sheer devotion that had brought it to birth. At 4" by 6" by 11", the Villager was far from miniaturized, according to publicity. With eight transistors, an oversized 6" speaker, and a 6.8 oz. magnet, the sets were designed for "optimum output" and gave ample volume. The sets were explicitly designed "for large group listening, so than [sic] an entire village can hear." Missionary users could request additional p.a. or phono and external loudspeaker features, which would be useful for missionaries for "larger crowd coverage in market places, etc."

Design of the Villager remedied several problems associated in earlier prototypes with battery usage. Easily accessible from the bottom of the set where it prevented leakage on the chassis, the battery holder was sufficiently wide to prevent binding and spring-loaded so that the set's size D flashlight batteries did not have to be closely fitted, an important consideration in developing countries since batteries did not come in standard length but varied in length by fractions of an inch. The battery holder was polarity foolproof; as long as the user or listener lined batteries up in series (that is, a proper line), they could be placed in the wrong way and still not short-circuit the set.⁸⁹

In order to secure a production run, Thiessen had to fudge the delicate and thorny issue of pre-tuning. 'Villagers' could tune from 9 MHz to 24 MHz. 'Villager' brochures

indicated simply that pretuning was possible, but failed to specify exactly what was meant by the term and what stations (including ELWA) were involved, creating subsequent confusion.⁹⁰ Missionary stations wrote requesting Thiessen to clarify how the committee would pretune sets and on what exact frequencies. To prevent listeners from retuning their radios, ‘Villagers’ came with closed backs. Sealing cabinets also prevented African villagers from using sets for alternative purposes: “...when on the field this set goes into a village, the people cannot take the transistors out and use them for a nose ring or ear rings.”⁹¹ Project engineers had tropicalized Villagers from the “inside out” by using transformers made of fungus-proof material.⁹² In order to reduce costs and distribution problems, Thiessen did not provide export shipping, requesting a U.S. mailing address from buyers.⁹³ Sets came with warranty cards, validating a one-year unconditional guarantee from Sencore, and an instruction book, enabling project personnel to maintain future field data on sets.⁹⁴

Thiessen’s experience with the ‘Villager’ demonstrated that a large unmet global demand existed for transistor receivers among missionary users around the world. By mid-summer 1958, inquiries and orders arrived daily from all over the world, thanks to the project’s publicity efforts.⁹⁵ SIM’s New York and Toronto offices received \$30,000 in response to a solicitation included in M.A. Darroch’s spring prayer letter, enough to pay for 750 Villagers at the price which Darroch publicized of \$40.⁹⁶ World-wide demand for Villagers “quickly absorbed” the entire initial production run the following April, and Thiessen could not fill incoming orders, prompting the committee’s decision at their third meeting to expand further production and development.⁹⁷

A variety of missionary users expressed interest in or purchased missionary transistor receivers, including mission agencies, missionary radio stations, and individual missionaries. The agency SIM represented the single largest patron of the missionary transistor receiver project. Of the initial production run of 500 sets, ELWA in Liberia received 50 broadcast band and 36 shortwave sets (86) and SIM's Nigeria office 50 shortwave sets, while individual SIM missionaries requested a further 30-40 sets, for a total of roughly 175 sets, over one-quarter of the first production run.⁹⁸ Numerous missionary radio stations also expressed support and interest in the use of missionary transistor receivers between May 1958 and May 1959, the time of the project's first production order. The list included leading broadcasters HCJB and FEBC, Station HLKX in Korea (operated by the Evangelical Alliance Mission), IBRA Radio (Stockholm), Station HOXO in Panama (operated jointly by the World Radio Missionary Fellowship and the Latin American Mission), and Station "La Cruz del Sur" in La Paz, Bolivia. Finally, large numbers of individual missionaries purchased Villagers from their own personal funds for use in the field. Archival records attest that Thiessen received requests from missionaries in all quarters of the globe, including Sierra Leone, Cameroon, Brazil, Mexico, Panama, West Indies, Honduras, the Philippines, and Australia.

Correspondence between Derek Porter and Thiessen in the fall of 1958 gives a brief flavor of how at least some missionaries likely used transistor receivers. Porter took advantage of the flexibility of the Villager prototype as a tool for street evangelism, wildly endorsing the receiver's "tremendous potential for Missionary Evangelism." Porter considered the set "the answer to my prayers: what has been on my heart ever since ELWA started." On Sunday evenings, Porter took his set into the streets of Ilorin's

English-speaking Ibo section to stage a series of “Radio Rallies,” using the set as a boom-box to “boom forth through the radio-speaker 3 good Gospel programmes – Howard Jones [ELWA’s radio pastor], Billy Graham, and Eric Hutchins (U.K.).” By a flick of a switch, Porter then turned the speaker into a microphone for preaching. With the proper mike, he waxed, “I can preach though it and draw in the net after relaying ELWA programs. This is going to revolutionize the effectiveness of my ministry.” By “relaying” ELWA broadcasts, the transistor receiver provided “a terrific means one can use to get out the Gospel,” the evangelist proclaimed.

Nor was such usage of the Villager prototype atypical. A report from Dale Graber, a technical manager at ELWA, indicated that Porter’s evangelistic technique represented a common use of the new missionary transistor receiver. According to Graber, local preachers used receivers to attract a crowd. Once a group had gathered, it listened to ELWA’s gospel presentation; when the station program finished, the preacher turned off the set and carried on with an evangelical religious service.⁹⁹ Rev. Louis Bowers of the Lutheran Mission in Sanoyea, Liberia testified to this widespread practice as well. Bowers placed roughly fifteen sets “in the hands of evangelists who use them very advantageously,” taking them on treks and setting them up in village squares to attract crowds.¹⁰⁰

Thiessen responded enthusiastically to Porter’s letters, highly praising the missionary’s usage of the receiver as an ideal type, which represented exactly how project organizers had intended the missionary tool to be employed. Porter’s example lifted the spirits of Thiessen, Gilmer, and Voss by demonstrating that the new receiver worked effectively: “Your letter is perhaps the most encouraging one we have had from

missionaries, and our fellows in Chicago were more than pleased.” Thiessen extolled Porter’s radio ministry, claiming it indicated “what can be done when there is sufficient vision to use this means [i.e., radio] properly.”

Taken together, Graber’s report and Porter’s letters indicate that the primary usage of new transistor missionary receivers was to “relay” the Gospel, creating a means by which to attract and then evangelize audiences. As the examples cited show, this could be done in a variety of ways by combining broadcast evangelism with more traditional, face-to-face methods of missionary encounter. The key was that missionaries retained control of the sets, since these believers possessed “sufficient vision” to ensure that sets were used properly for evangelistic purposes rather than information or entertainment.

The End of the Missionary Transistor Receiver Project, March - December 1959

Perhaps the greatest irony of the missionary transistor receiver project was that as its first products (‘Villagers’) reached the mission field, the project irreparably unraveled. Following SIM’s withdrawal, the committee members searched for a new institutional home. In early March 1959, Thiessen, Voss, and Gilmer had met with leaders of Moody Bible Institute and Missionary Equipment Services (MES), the committee’s new distributor. While officials with MBI expressed their strong approval of the project, which they felt “should be fully developed for the Gospel’s sake,” they shied away from any formal commitment. Hipperson of MES recommitted his agency’s services to market the transistor receivers, but both groups agreed that the project should strengthen liaisons with the conservative evangelical agency, World Conference on Missionary Radio (WCMR), with whom the group agreed the “final solution of the entire matter lay.”

Thiessen took the occasion of the meeting to resign his chairmanship, suggesting as a replacement George Logan, a “prominent Christian businessman” from Minneapolis, Minnesota (Thiessen’s home state), who had offered his services and office facilities to temporarily handle the business details of the project.¹⁰¹

Outside of Thiessen’s personal hands, the project rapidly spun out of control. In July 1959, Thiessen requested the committee approve an emergency stop procedure, preventing George Logan from access to the committee’s assets. Thiessen accused Logan of attempting to “embezzle” the project and commandeer it for his personal gain through a variety of underhand actions, which had succeeded in alienating Thiessen, Gilmer, and Voss. Thiessen’s feeling of bitterness and betrayal towards Logan demonstrated his sense of acute personal commitment to the project. Thiessen felt that he had been entrusted the transistor receiver project by God himself, who provided the original vision in response to prayer, by mission agencies and missionaries, who had entrusted him with funds to order sets, and by donors, who made the receiver ministry possible “financially and by prayer”.¹⁰²

Although it followed rapidly from the unsavory turn of events described, the formal end of the transistor project must be understood in terms of the overall development of a global commercial transistor receiver market. In December 1959, the transistor committee met for final time along with representatives of the WCMR, marking the official close of the missionary transistor receiver project. The WCMR spokesman articulated the sentiments of those present. Reviewing the results of a recent world tour of missionary radio facilities undertaken by Clarence Jones, as well as receiver reports from missionary broadcasters in Asia, Africa, and Latin America and Thiessen’s

own analysis of the transistor committee's situation, the WCMR spokesman argued that "industry today is providing receivers that meet the general needs of missionary radio." Citing the appearance of several Japanese models and falling receiver prices, the WCMR spokesmen indicated that "an extremely competitive market" had emerged in transistor receivers around the world. It was the considered position of the WCMR and its leaders that "we could not compete in this market but would do as well as to buy from these firms." The WCMR concluded tellingly: "Since the industry is meeting the need for receivers to be placed on the mission fields, the original vision of the Transistor Radio Research Committee is being satisfied." As a result of the emergence of a world receiver market, the WCMR noted with finality, "the Transistor Radio Research Committee as such is now disbanding having fulfilled its responsibility during the past 4 ½ years."¹⁰³

Attendees rationalized the dissolution of the transistor committee in various ways. Members of the meeting accepted the arrival of a worldwide commercial radio market as inevitable and beneficial for missionary broadcasters: "... all of us expected that this would happen sooner or later and we can now rejoice in the Lord's provision." Thiessen emphasized the spiritual fortitude of the committee, which had "met a need and carried out its responsibility." The chairman emphasized the obedience of project organizers over four years, which resulted in the salvation of souls that might otherwise have been lost. On the engineering side, a Raytheon Vice President allegedly praised the technical achievement of the transistor committee: "You have made a valuable contribution to the industry." The group closed by noting a continual need in the missionary radio community for technical consulting and advice regarding the most suitable commercial offerings for use in the mission field. Attendees selected Voss and Gilmer to act in this

capacity under the WCMR, producing reports to be carried in the *Foreign Missionary Radio* bulletin. Remaining project funds were therefore turned over to Gilmer and Voss for use in testing commercial receivers.

Analyzing the Missionary Transistor Receiver Project

Before interpreting the larger historical significance of the missionary transistor receiver project in the conclusion, it is helpful to analyze more closely the reasons for the limited success of the transistor committee (as measured against its own production goals) and the causes that led to its premature demise (as measured by its own expectations of a longer-term future).

In general, four main reasons explain the inability of the transistor committee to persuade evangelical organizations to buy large numbers of radios for field workers: lack of institutional support, timing factors, high performance standards, and market fragmentation. Each of these will be treated in order. Taken together, the detailed analysis of missionary transistor project that follows demonstrates the trade-offs involved in design choices made by project managers and engineers, which produced a particular product and narrow utility, engendering specific long-term consequences that were not often immediately apparent to the primary actors involved.

The first, and perhaps most obvious, reason for the transistor project's demise was its lack of adequate institutional support. Though housed under the auspices of SIM, the differences in temperament, experience, and outlook between SIM executives in Nigeria, ELWA broadcasters, and Thiessen in Chicago became a hallmark of the project that seriously hampered its effectiveness, even if these differences were largely papered over

in public. SIM officials disagreed with Thiessen on fundamental philosophical issues, such as the policies of indignization and commercialization, and they held widely divergent views on the appropriate relative roles of the African and North American churches. Though perhaps unavoidable with hindsight, the split with SIM's leaders damaged Thiessen's project badly.

The lack of institutional support for the transistor project reflected itself in chronic under-funding. Lack of capital was the reason Thiessen cited most frequently for the limitations confronted by project managers, including shortage of supplies and limited field data, which produced development and production delays. Thiessen attributed project delays before SIM's Jos council to a lack of funding: "We didn't have the capital to go ahead, therefore, we have had to raise the money in various ways." Thiessen believed that shortage of capital had also resulted in a lack of adequate field data, which further hampered development of the project: "If we had the money to send a man to various parts of the world to do the testing, and collect the necessary data, we would have made much better and more rapid progress."¹⁰⁴

Thiessen's rationale possessed merit. From the outset, the project suffered from the lack of a resolute personal or institutional sponsor. Thiessen's attempt to levy support in Chicago early on failed to score in a diffuse and mildly skeptical missionary broadcasting community. Like missionary broadcasters, other potential users such as mission agencies remained on the fence, waiting to see the proven success of the new receiver in action before committing large amounts of funds. Thiessen was thus trapped in a no-win "Catch 22:" he had to demonstrate the success of the missionary receiver before he could acquire the funds needed to develop the set and prove its worth.

Though the transistor project did enjoy widespread support in the conservative evangelical missionary community, its home base was geographically diffuse and difficult to manage. The project's diffuseness was reflected in the make-up of the Chicago meeting as well as the project's loose managerial structure, which spread a seven-man committee across the United States. Major decisions required lengthy consultations; only Thiessen and Voss's directive leadership kept the project moving along. As chapter 7 indicated, the failure of any single organization to take up a large production order beginning with the Chicago conference meant that Thiessen had to cull orders in a time-consuming process from a highly fractured missionary user market, scattered across the globe.

The project's lack of a solid institutional base became evident, finally, in its dependence on missionary users around the world for field results. Here, waiting on often unreliable partners for intermittent feedback over numerous months cost the project valuable development time. That Thiessen was able to get a receiver out at all was due in no small part to his historical and personal ties as co-founder of Station ELWA, which functioned as the field nerve center and crucial experimental cauldron of the project.

Time issues mattered to the project in two general areas: production delays and the venture's overall window of opportunity. While the former produced immediate pressure and the latter operated over the long-term, the two worked off each other to severely constrain project managers' freedom of movement. As detailed in the dissertation, production delays had numerous proximate sources, relating to limited financial resources, dependence on foreign sources of test data, logistical problems, lack of project experience, and outright mismanagement. Continual production delays,

Thiessen recognized, had likely cost the project the financial support of businessmen like Vander Hooning.¹⁰⁵

Overall, however, the project's time problems had deeper structural causes than simply production delays. The outcome of the transistor project hinged on that of its principal product, the shortwave receiver. As Gilmer presciently commented in June 1957, project managers had tied the fate of their broadcast-band model to the short-wave set by subsidizing shortwave development costs in the price of the AM set and then waiting to produce AM sets until the complicated issues of pretuning on shortwave sets had been worked out. In hindsight, project managers had a precise, limited timeframe within which to produce a workable short-wave model. This window occupied the period of time after high-frequency transistors became widely affordable and before global consumer electronics giants entered into the radio market in developing countries. The development of low-cost shortwave radios using high-frequency transistors allowed radio manufacturers to make inroads in the huge untapped markets of "Third World" countries beginning in 1960. Many of these markets, particularly those in Africa, wanted shortwave sets because they had minimal domestic broadcast facilities. By 1960, consumer electronics giants began to make significant inroads into the shortwave transistor market, manufacturing a specialty model with pretuning capabilities for global markets, as the next chapter will show. Production delays due to the difficulty of developing a reliable pretuned shortwave receiver for missionary users eventually cost the project its lead-time in development and closed this historic window of opportunity.

Questions of timing were closely linked to the issue of the missionary transistor receiver's high level of performance specifications. Voss and Gilmer constantly

engineered the receiver to perform well in the missionary environment, consuming valuable time and money to yield continual enhancements. Thiessen frequently rationalized delays in development by arguing that they enhanced the technical quality of the receiver. As Thiessen wrote in early 1959 to an Indian shortwave listener who had waited fifteen months for a sample Villager, production delays actually “contributed toward a much better final product.”¹⁰⁶ While this was undoubtedly true, the equilibrium between resource consumption and product improvements quickly reached a point of diminishing returns, where further refinements eventually cost more in lost time than they were eventually worth.

As became apparent to outside observers, missionary engineers on the receiver project had designed the receiver’s demanding specifications to a niche audience and a custom use. J.T. Neubauer, the RCA consultant, had stressed to Robert Luckey in May 1957 that Voss and Gilmer had far exceeded commercial standards for audio performance on their experimental prototypes. Voss, Gilmer, and Bercovitz’s insistence on including eight transistors in the set, rather than the usual four in industry, stemmed from their desire to achieve a salient performance objective of missionary users, namely “outdoor group listening.” In response to a request for sample Villagers with p.a. system attachments in November 1958 from a Communications Media Officer with the U.S. Operations Mission to Tunisia, Griffith Davis, Thiessen confessed that the set probably possessed more output, sensitivity, selectivity than Davis wanted, since it was expressly “designed for large group or village listening.”¹⁰⁷ Of course, it should be stated that the missionary transistor receiver was “over-engineered” only from the standpoint of a commercial and mass consumer application. As will be explained in the conclusion, the

project's principal organizers never intended to reach such an audience (at least directly). As will be shown, this realization explains the receiver's peculiar use and why the set never found a large market.

Project organizers felt that high design standards and levels of set performance were required in order to obtain long-term funding. The grass-roots marketing strategy put forward by Thiessen in Chicago and endorsed by conference members relied on missionaries to publicize the new transistor receiver largely by word-of-mouth after demonstrating the working value of radios in the field. It was therefore crucial for the future of the project over the long haul that sets perform well initially and not malfunction. Achieving what project engineers considered a satisfactory level of performance and reliability, particularly on the shortwave prototype re-engineered by El Rad, involved a technical judgment on the part of managers and engineers. The high standard they chose consumed designers precious months (even years) in development time. The result eventually proved the project's undoing, since by the time missionaries acquired the new receivers less expensive, equally reliable commercial sets with comparable performance levels began reaching markets overseas.

Loss of lead time and insistence on high performance standards combined to provide the proximate causes of the transistor committee's demise. Extensive time delays over four years allowed Voss and Gilmer to work out bugs and produce a high-quality custom product, as Herschel Ries had petitioned Thiessen early on. By the time engineers rolled out a radio, however, the project's precious advance of several months over private industry (which Thiessen had vaunted in the spring of 1955) had vanished. The fact that the transistor project terminated nine months after its first production run of Villagers due

to the emergence of a healthy global transistor radio market indicated how far the project had fallen behind as a result of production delays and rigid design specifications. As late as March 1957, statements at the third transistor conference meeting indicated as well committee members' naivete about the state of world commercial receiver production.

The principal reason why the transistor committee did not achieve its objective of large-volume receiver production, however, derived from the fragmented nature of the missionary broadcasting market. Fragmentation of the committee's market contained numerous dimensions and reflected itself in many ways. The missionary broadcasting community joined an array of different types of users from around the world, including missionary agencies, missionary radio stations, and individual missionaries. A common religious belief system and shared commitment to world evangelization by radio united missionary users. Geography, climate, culture, mission philosophy, and communication needs, however, equally separated them. As the previous three chapters have shown, even sister organizations such as SIM, ELWA, and the transistor committee, allied in the same cause and the same working field, could not join together over an extended period to promote the missionary transistor receiver due to substantial philosophical differences.

Committee members made an understandable error at the outset of the project. Rather than pursue a single, simple product line, as Clarence Jones had envisioned with his mass receiver project in 1944, project organizers pursued the most flexible design approach possible in order to gain broad acceptance in the conservative evangelical community for their project and to maximize the marketability of the receiver. In hindsight, the decision to adopt a modular design in order to appeal to as wide a variety of missionary users as possible appears to have been the Achilles' heel of the project. The

chairman took partial responsibility for this failing on the part of the project. “I’m quite sure that we are to blame in that we have been trying to do too much for too little,” he wrote in August 1958.¹⁰⁸ Thiessen came to recognize that the “modular design” of the receiver permitted too many models and that the committee needed to standardize. Thiessen’s decision to abandon a custom production approach and reduce the project’s fourteen circuit designs to a single model and type in many ways accounts for the committee’s success in finally producing Villagers..

Pretuning proved both symptom and cause of the fragmentation of missionary broadcasting. Pretuning requirements reflected the diversity of the missionary broadcasting community, since most stations broadcast on different frequencies. At the same time, the requirement of pretuning also fragmented the missionary broadcasting field into a series of tiny niche markets, defined by distinct wavelengths. Arguably, the requirement of pretuning, which missionary broadcasters almost universally insisted upon for moral and spiritual reasons, made it economically impossible to produce a single receiver for the entire field of missionary broadcasters and thereby gain from the benefits of mass production. In essence, pretuning mandated custom ordering and batch production. John Clark at El Rad agreed to pretune radios for individual broadcasters on minimum orders of 25 sets – Thiessen later increased the amount to 50 sets for a minimum custom order of Villagers (even though he did little to promote it). To make matters more complicated for manufacturers, shortwave missionary broadcasters frequently requested sets with multiple bands and several pretuned settings to allow for frequency hopping. It may be more than a coincidence that Clarence Jones coupled his low-cost receiver project with a proposal to develop a network of high-power, local long-

wave stations, since pretuning long-wave receivers posed far less problem than their high-frequency counterparts.

The groundswell of participation by individual missionaries and mission groups in the committee's first order of Villagers indicated that a significant demand for transistor receivers existed among missionaries in the field. Despite their shared conservative evangelical beliefs, however, missionary demand was far from monolithic, but was highly diffuse and widely scattered over the globe. That individual missionaries, rather than a single mission organization or agency, bought up the bulk of the production run of Villagers attested to the fractured market which Thiessen and other organizers faced. Such diffusion posed logistical headaches for the project's chairman in both raising funds and distributing receivers. As the next chapter will show, the diffuse demand for radios in the mission field was best met not by proprietary initiatives such as the transistor committee, which lacked instrumental means, but by the distribution mechanism of the market.

Overall, the experience of the transistor committee highlighted the difficulty of assembling, much less maintaining, a mass market in short-wave receivers, since the field covered such a wide geographic area with a variety of conditions and consumer demands, especially during a transitional period in high-frequency transistor R&D in which no clear industry or technical standards for shortwave broadcasting existed.

The receiver envisioned by the committee possessed intriguing similarities and differences from the one outlined by Clarence Jones in his 1944 "Project to Provide Small and Low-Priced Receiving Sets to the Underprivileged Masses of Latin America and Elsewhere," described at length in chapter 4. The two projects bore important

continuities, borne of the chronic limitations which missionary broadcasters faced even after the invention of the transistor in their endeavor to solve the “receiver problem.” Obstacles faced by organizers of the transistor receiver project, including a lack of resources, reliance on the field, competition from industry, the need for collective action, and the fragmented missionary radio market, illustrate how difficult it was to design and actually build a technology that would assist in converting the heathen masses under harsh and foreign climactic conditions in the southern hemisphere. Yet the story of the receiver project as a continuous narrative and common enterprise over two decades also attests to the amazing resiliency of the visionaries of missionary radio and to the power of their residual idealism, which motivated them to persevere in the face of great difficulty.

Differences between Jones’s and Thiessen’s respective missionary receiver efforts, however, stand out as markedly and prove even more thought-provoking than their similarities. Whereas Jones realized that low cost (below \$10) would prove the deciding factor in selling radios to the poor classes and so settled on a barebones, low-performance, but reliable design, Thiessen and his colleagues opted for a far more expensive and flexible tool of evangelism, with far higher performance standards, designed to appeal to a wide array of missionary users that spanned the globe. The disparity in design between Jones and Thiessen’s respective receiver models - one for poor individuals, the other “for every village” – simply reflected far deeper differences in philosophy, strategic objectives, and approaches to production between the two founding figures and visionaries of missionary radio. Whereas Jones envisioned reaching a mass market of individuals among the rural poor who would own the set for themselves, Thiessen anticipated reaching “missionary users” and evangelists who would use the radio to reach dozens of

individuals at a time and retain control of the set. While Jones needed to mass produce a cheap set in order to reach large numbers of people, Thiessen expected to custom manufacture a receiver for his smaller audience, using “flexible” batch production methods.¹⁰⁹

Conclusion

In total, combining experimental models and production sets, the transistor missionary receiver project produced between 500 and 600 transistor receivers from 1954 to 1960, predominantly on the broadcast band. The larger historical importance of the project, however, should not simply be measured by numbers. As project managers and missionary broadcasters correctly anticipated, the project revealed, as it precipitated, a far larger demand for transistor receivers among missionary users around the world (mission agencies, radio stations, and individual missionaries), which Villager production barely scratched. The number of actual listeners which missionary receivers reached, furthermore, significantly exceeded the number of sets alone, since missionaries employed radios by design in small group (village) settings.

More importantly than the number of radios it produced, the missionary transistor receiver project revealed a great deal about the men who organized it. Project managers and engineers had three notable features, as seen through the project’s five-year history: they were resilient in the face of hardship; they designed for missionaries in the field, not a mass market of rural poor (nor for the home market); and they were extremely concerned to ensure that those missionaries used the sets “properly.”

First, the history of missionary transistor receiver project revealed the perseverance and devotion of a small group of men who developed it over five years. The resiliency of project organizers derived from three closely inter-related belief systems: their conservative evangelical religion, their felt need to evangelize the world, and their residual belief in the power of technology to solve the crisis in world missions. The outworking of the project dramatically illustrated the activism and sense of initiative which propelled missionary broadcasters. Rather than waiting four years for industry to develop a cheap, reliable short-wave receiver for the mission field, Thiessen, Gilmer, and Voss set about single-handedly to manufacture one themselves, pairing old, conventional receiver technology with the dramatic power-saving capabilities of the transistor.

Second, we should remember that project personnel singled out mission agencies and missionaries, not end listeners, as their intended end users. Voss explicitly indicated the audience for whom missionary transistor designed receivers: “It is our hope and prayer that the day is not far off when any mission board or missionary Radio station or individual missionary can get quick delivery of any type of set he needs set up on the frequency or frequencies he needs.”¹¹⁰ Almost no correspondence from actual listeners appears in the surviving records of the transistor receiver project, reflecting not only the lack of interaction between project personnel and missionary radio’s listening audiences, but project managers’ lack of interest in listener contact as well. Thiessen, Gilmer, and Voss *et al* had local listeners in developing countries in mind as ultimate listeners, but only as passive consumers. Various otherwise insignificant details of the transistor project’s history make it apparent that organizers did not have mass consumer sales overseas in their immediate mind. SIM wrote to the Internal Revenue Service, claiming

exemption from manufacturer's excise tax on the first production run of receivers on the grounds that, as a charitable organization, it intended the sets to be used for "educational, religious talks" and not commercial purposes.¹¹¹ Thiessen requested that all orders include a United States mailing addresses on all orders, indicating that he had not set the project up for the expense of export shipping.¹¹²

Third, project organizers clearly identified missionaries as their primary audience chiefly because they hoped missionaries and their appointees would coordinate and control set usage. The history of the transistor receiver demonstrated that missionary broadcasters and engineers turned to technology after the invention of the transistor not simply as a means of extending cultural influence in remote regions of the developing world, but as a means of material control as well. As Thiessen stated bluntly, "It is true that the African can buy cheaper radio sets and it is also true that with these he will listen to the cheapest trash that's available."¹¹³ Project organizers were not interested in producing cheaper sets *per se* (which they could have done commercially), but in producing cheaper sets that fulfilled the demands of the missionary broadcasting community.

Project organizers intended to influence listener behavior by targeting missionary users, who could then place and monitor sets. Thiessen repeatedly opposed selling radios to foreign nationals directly for the simple reason that it would mean an immediate loss of control for managers over how sets were used. Thiessen mailed twelve Villagers to Walter Ohman of SIM's Addis Adaba mission and left it to the mission head, typically, to decide where to put the sets: "I will leave it to you how these can be most advantageously used."¹¹⁴ Committee members and project organizers expected missionaries to make sure

the new sets were employed for strictly religious purposes. Thiessen commended Derek Porter in an exchange of letters because the street evangelist possessed “sufficient vision” in Thiessen’s view to use the means of radio properly. In Thiessen’s view (and other organizers as well), receivers required a proper vision not only to make, but to use as well.

Despite its benefits, reliance on outside missionaries immensely complicated the business of evangelization for missionary broadcasters. Mission organizations working in frontier areas frequently passed receivers on to local evangelists, pastors, and church workers in order to increase the circulation of sets and enhance their effectiveness. ELWA had demonstrated the feasibility and merit of this approach, distributing radios to a range of Protestant missions in the Liberian hinterland, and Watkins had discussed the station’s experience with Thiessen, Voss, and others at the Chicago conference. Reliance on third parties, however, spelled an obvious loss of control for radio stations. Mission agencies did not necessarily comply with the wishes or demands of broadcasters, even though they gave them free radios, as the next chapter on ELWA’s subsequent history will make clear. Pretuning sets provided one way of ensuring that radios would continue to be used solely for religious purposes once they passed out of missionary hands.

Overall, missionary engineers and officials identified the challenge facing broadcasters in the developing world not as the “listener problem,” but as the “receiver problem.” Organizers equated listeners with receivers and construed the problem of reaching audiences overseas in technological terms as one of radio supply. By defining the audience problem in terms of receivers rather than listeners *per se*, project organizers not only indicated their predilection for technology and their intention to reach missionaries rather than foreign nationals, but their implicit understanding that

missionaries as “visionary users” would control the new transistor receivers as well, thereby ensuring that sets were properly used for the strict purpose of group evangelism.

The motto of the project chosen by Thiessen – “a radio for every village” – is indicative of this. The slogan made it apparent that Thiessen never intended to provide a radio for every *villager*, but one for every *village*, thereby dramatically augmenting the scope of receivers’ effectiveness. Thiessen intended the radio for both group listening under missionary control – a clear reference to his formative African missionary experience. As the committee’s choice of model names indicated (the Companion, the Messenger, and the Missionary), receivers were intended primarily as accoutrements, as aides, and as tools for the kitbag of the North American missionary. The receiver title selected by the project referred not to the denizen of the village (the “villager”), but to the spiritual jurisdiction covered by the receiver and the missionary who kept it (the “Villager”). The title’s usage by conservative evangelical missionaries echoed of a vaguely similar term from an earlier medieval Christian era - “Christendom.” Like “Christendom,” the “Villager” connoted a domain of geographic territory tied to religious authority, maintained this time not directly by parish priests but indirectly by missionaries and broadcasters through the medium of the airwaves. Along with the missionary who maintained it and the broadcaster who supplied it, the Villager stood as a token representation and vigilant reminder of the tiny realm over which American conservative evangelicals kept watch.

In closing, this historical study of the missionary receiver project provides future insight for the development of world-wide transistor radio markets after 1960. The outcome of the project demonstrated that, despite its dramatic power savings, transistor

technology alone did not suffice to create or sustain a mass receiver market in the developing world, in this case primarily in Africa. Missionary broadcasters had a cultural agenda that trumped the goal of commercial gain. As the next chapter will demonstrate, and as prescient officials from Clarence Jones to M.A. Darroch and Guy Playfair had anticipated, distribution of radio receivers on a mass scale for poor individuals required the coupling of transistor technology with commercial forces to eventually overcome the “receiver problem” in developing countries. The advent of commercialism in the developing world, however, spelt a host of changes and meant that the solution to the receiving problem would no longer be on missionary broadcasters’ terms.

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- ¹ Letter from Abe Thiessen to A.D. Helser, March 21, 1958, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM International Archives (SIM), Fort Mill, SC.
- ² Letter from Abe Thiessen to J.C. Wiebe, February 20, 1957, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ³ "Discussion of Production Possibilities after Jim Vaus"; "Manufacturer's Report – Mr. Clark"; and "Organization Discussion," Missionary Transistor Research Meeting (MTRM), April 30 – May 1, 1956, Folder 12, Box 27, Collection 86 (International Christian Broadcasters), Billy Graham Center Archives (BGCA).
- ⁴ Letter from Abe Thiessen to Ray de la Haye, October 8, 1956, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁵ "Discussion of Production Possibilities after Jim Vaus"; "Manufacturer's Report – Mr. Clark"; and "Organization Discussion," Missionary Transistor Research Meeting (MTRM), April 30 – May 1, 1956, Folder 12, Box 27, Collection 86, BGCA.
- ⁶ Letter from Edward S. Miller to Abe Thiessen, November 30, 1956, Folder 27, Box 32, Collection 86, BGCA. Miscellaneous materials included items such as cabinet, batteries, knobs, and dials.
- ⁷ Letter from Abe Thiessen to Robert Luckey, November 30, 1956, Folder 32, Box 32, Collection 86, BGCA.
- ⁸ Letter from Robert Luckey to Abe Thiessen, October 25, 1956, Folder 27, Box 32, Collection 86, BGCA.
- ⁹ Letter from Edward S. Miller to Abe Thiessen, November 30, 1956, Folder 27, Box 32, Collection 86, BGCA. Miscellaneous materials included items such as cabinet, batteries, knobs, and dials.
- ¹⁰ Letter from Abe Thiessen to Ray de la Haye, December 12, 1956, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ¹¹ Letter from Stan Brookman to Abe Thiessen, April 5, 1957, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ¹² Abe Thiessen to Ray de la Haye, January 24, 1957, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ¹³ Letter from Abe Thiessen to Ray de la Haye, January 24, 1957, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ¹⁴ Letter from Abe Thiessen to Robert Luckey, March 12, 1957, Folder 32, Box 32, Collection 86, BGCA.
- ¹⁵ Letter from Herschel Ries to Abe Thiessen, January 15, 1957, Collection 86, BGCA.
- ¹⁶ Letter from J.C. Neubauer to Robert Luckey, May 28, 1957, Folder 5 Box 33, Collection 86, BGCA.
- ¹⁷ Letter from J.C. Neubauer to Robert Luckey, May 28, 1957, Folder 5 Box 33, Collection 86, BGCA.
- ¹⁸ Bercovitz circuit diagram, dated June 21, 1956, attachment to letter from Edward Miller to Abe Thiessen, June 7, 1957, Folder 23, Box 33, Collection 86, BGCA.
- ¹⁹ Letter from Abe Thiessen to members of the Transistor Receiver Project, April 8, 1957, Folder 32, Box 33, Collection 86, BGCA.
- ²⁰ Letter from Nat Bercovitz to Abe Thiessen, April 29, 1957, Folder 26, Box 33, Collection 86, BGCA.
- ²¹ Letter from Abe Thiessen to members of the Transistor Receiver Project, May 23, 1957, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ²² Letter from Abe Thiessen to members of the Transistor Receiver Project, May 23, 1957, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ²³ Letter from Tom Gilmer to Abe Thiessen, June 1, 1957, Folder 26, Box 33, Collection 86, BGCA.
- ²⁴ Letter from Allied Radio Corporation to Abe Thiessen, June 6, 1957, Folder 23, Box 32, Collection 86, BGCA.
- ²⁵ Letter from Abe Thiessen to Ray de la Haye, March 13, 1957, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ²⁶ Letter from Abe Thiessen to Ray de la Haye, March 13, 1957, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ²⁷ Letter from Abe Thiessen to Ray de la Haye, March 13, 1957, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ²⁸ Letter from Abe Thiessen to Ray de la Haye, January 24, 1957, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ²⁹ Letter from Tom Gilmer to Abe Thiessen, June 14, 1957, Folder 26, Box 33, Collection 86, BGCA.

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- ³⁰ Letter from Abe Thiessen to members of the Transistor Receiver Project, May 21, 1957, Folder 32, Box 32, Collection 86, BGCA.
- ³¹ Letter from Tom Gilmer to Abe Thiessen, May 21, 1957, Folder 26, Box 33, Collection 86, BGCA.
- ³² Letter from Tom Gilmer to Abe Thiessen, June 15, 1957, Folder 26, Box 33, Collection 86, BGCA.
- ³³ Letter from Edward Miller to Abe Thiessen, June 7, 1957, Folder 23, Box 33, Collection 86, BGCA.
- ³⁴ Letter from Abe Thiessen to Tom Gilmer, June 10, 1957, cited in letter from Gilmer to Thiessen, June 14, 1957, Folder 26, Box 33, Collection 86, BGCA.
- ³⁵ Letter from Tom Gilmer to Abe Thiessen, June 1, 1957, Folder 26, Box 33, Collection 86, BGCA.
- ³⁶ Letter from Abe Thiessen to Ray de la Haye, August 13, 1957, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ³⁷ Letter from Abe Thiessen to Robert Luckey, September 29, 1957, Folder 32, Box 32, Collection 86, BGCA.
- ³⁸ Letter from John Clark to Abe Thiessen, November 1, 1957, Folder 5, Box 33, Collection 86, BGCA.
- ³⁹ Letter from Hank Voss to Abe Thiessen, undated but stamped "Received September 23, 1957," Folder 26, Box 33, Collection 86, BGCA.
- ⁴⁰ Dale Graber, "Portable Missionary Radio Project," 1958, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁴¹ Letter from Ray de la Haye to Abe Thiessen, September 10, 1957, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁴² Letter from Ray Davis to Abe Thiessen, December 17, 1957, referenced in the letter from Abe Thiessen to Ray Davis, January 20, 1958, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁴³ Letter from Ray Davis to Abe Thiessen, January 2, 1957, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁴⁴ Letter from Abe Thiessen to J.C. Wiebe, February 20, 1957, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁴⁵ Letter from G.W. Playfair to Rev. A.G. Thiessen, June 4, 1957, Folder 35, Box, 19, Collection 86, BGCA.
- ⁴⁶ Letter from Abe Thiessen to Rev. G.W. Playfair, September 4, 1957, Folder 35, Box, 19, Collection 86, BGCA.
- ⁴⁷ Letter from John [Weibe] to Ray de la Haye, December 3, 1956, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁴⁸ Letter from de la Haye to Abe Thiessen, September 10, 1957, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁴⁹ Letter from Herschel Ries to Tom Gilmer and Hank Voss, October 26, 1957, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁵⁰ Letter from Hank Voss to Abe Thiessen, undated, stamped "Received July [4?] 1957," Folder 26, Box 33, Collection 86, BGCA.
- ⁵¹ Letter from Hank Voss to Abe Thiessen, undated, stamped "Received July [4?] 1957," Folder 26, Box 33, Collection 86, BGCA.
- ⁵² Memorandum from M.A. Darroch to Abe Thiessen, June 25, 1957, Folder 26, Box 33, Collection 86, BGCA.
- ⁵³ Letter from Hank Voss to Abe Thiessen, June 17, 1957, Folder 26, Box 33, Collection 86, BGCA.
- ⁵⁴ The complete list of companies is as follows: Admiral International Corporation (Chicago, IL); American Machine & Foundry Company (Defense and Electronics Divisions) (Boston, MA); Arvin Industries, Inc. (Columbus, IN); Automatic Radio Manufacturing Co., Inc. (Boston, MA); Barlowe Television (Bethpage, NY); DeWald Radio Manufacturing Corp. (Long Island City, NY); Doty Acoustical Electronic Labs (New York, NY); Gardiner Electronics Co. (Phoenix, AZ); Gyro Electronics Co. (New York, NY); Hal-Hen Company (Long Island City, NY); Hallicrafters Co. (Chicago, IL); Heath Company (Benton Harbor, MI); Industrial Development Engineering Associates Inc. (IDEA) (Indianapolis, IN); International Research Associates (Santa Monica, CA); Lear, Incorporated (Santa Monica, CA); Lel Inc (Copiague, NY); Measurement Engineering Ltd. (Arnprior, Canada); National Aircraft Corporation (Burbank, CA); Philco International Corporation (Phil, PA); Philmore Manufacturing Co. Inc. (New York, NY); Radio Corporation of America (RCA) (Camden, NJ); Radio Kits Inc. (New York, NY); Regency Division Idea Inc. (Indianapolis, IN); Sutton Electronic Company, Inc. (Lexington, KY); Symphony Electronics Corp.

(Los Angeles, CA); Transval Engineering Corporation (Culver City, CA); Warwick Manufacturing Corporation (Chicago, IL); and Zenith Radio Corporation (Chicago, IL). Sales literature from these firms can be found in Folder 5, Box 33, Collection 86, BGCA.

⁵⁵ Sample letter from Abe Thiessen to E.L. Nissen, Sales Manger, Admiral Corporation, July 17, 1957, Folder 5, Box 33, Collection 86, BGCA.

⁵⁶ Letter from A.C. Elles, General Sales Manager, IDEA, to Abe Thiessen, July 22, 1957, Folder 5, Box 33, Collection 86, BGCA.

⁵⁷ Hank Voss, "Analysis of Commercial Transistor Sets," undated (ca. July 1957), Folder 30, Box 32, Collection 86, BGCA

⁵⁸ Letter from Abe Thiessen to J. John, August 23, 1957, Folder 43, Box 32, Collection 86.

⁵⁹ Letter from Abe Thiessen to Ray Davis, January 20, 1958, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

⁶⁰ Letter from M.A. Darroch to Ray de la Haye, January 25, 1958, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

⁶¹ Letter from Ray de la Haye to M.A. Darroch, February 3, 1958, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

⁶² Letter from Abe Thiessen to A.D. Helser, February 7, 1958, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

⁶³ Letter from Abe Thiessen to A.D. Helser, February 7, 1958, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

⁶⁴ Letter from Abe Thiessen to M.A. Darroch, April 24, 1958, with attachment, "Transistor Radio Corporation," Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

⁶⁵ Letter from M.A. Darroch to Ray Davis, May 14, 1958, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

⁶⁶ "Transistor Missionary Radio Receiver Data: Report No. 1" attached to Letter from Abe Thiessen to Ray de la Haye, October 26, 1955, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

⁶⁷ Letter from Tom Gilmer to Abe Thiessen, October 24, 1957, Folder 26, Box 33, Collection 86, BGCA.

⁶⁸ Letter from Tom Gilmer to Abe Thiessen, June 14, 1957 and letter from Hank Voss to Abe Thiessen, June 17, 1957, Folder 26, Box 33, Collection 86, BGCA; letter from Hank Voss to Ray de la Haye, September 19, 1957, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

⁶⁹ Letter from Tom Gilmer to Abe Thiessen, October 24, 1957, Folder 26, Box 33, Collection 86, BGCA.

⁷⁰ Letter from Abe Thiessen to Ray Davis, January 20, 1958, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

⁷¹ Letter from Abe Thiessen to Ray Davis, January 20, 1958, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

⁷² Letter from Ray de la Haye to M.A. Darroch, February 3, 1958, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

⁷³ Letter from Derek Porter to Tom Gilmer, September 4, 1958, Folder 39, Box 32, Collection 86, BGCA.

⁷⁴ Letter from Derek Porter to Tom Gilmer, September 4, 1958, Folder 39, Box 32, Collection 86, BGCA.

⁷⁵ Letter from Abe Thiessen to Derek Porter, December 8, 1958, Folder 39, Box 32, Collection 86, BGCA.

⁷⁶ Letter from Herschel Ries to Tom Gilmer and Hank Voss, October 26, 1957, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

⁷⁷ Letter from Derek Porter to Abe Thiessen, October 20, 1958, Folder 39, Box 32, Collection 86, BGCA.

⁷⁸ Letter from Abe Thiessen to Ray Davis, January 20, 1958, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

⁷⁹ Letter from Abe Thiessen to Ray de la Haye, October 29, 1958, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

⁸⁰ Abe Thiessen, "The Job Receivers Have to Do," Report of the Second Conference on World Missionary Radio, June 12-14, 1958, Folder 16, Box 34, Collection 86, BGCA.

⁸¹ Letter from Abe Thiessen to Ray Davis, January 20, 1958, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

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- ⁸² Transistor Radio Research Meeting, February 17-18, 1959, Folder 4, Box 33, Collection 86, BGCA and "Minutes of World Committee on Missionary Radio: Transistor Radio Receiver Committee," in "Missionary Radio Receiver (MPR) Minutes," Liberia Box 15, Broadcasting Division, SIM.
- ⁸³ Transistor Radio Research Meeting, February 17-18, 1959, Folder 4, Box 33, Collection 86, BGCA, and "Minutes of World Committee on Missionary Radio: Transistor Radio Receiver Committee," in "Missionary Radio Receiver (MPR) Minutes," Liberia Box 15, Broadcasting Division, SIM.
- ⁸⁴ Transistor Radio Research Meeting, February 17-18, 1959, Folder 4, Box 33, Collection 86, BGCA, and "Minutes of World Committee on Missionary Radio: Transistor Radio Receiver Committee," in "Missionary Radio Receiver (MPR) Minutes," Liberia Box 15, Broadcasting Division, SIM.
- ⁸⁵ Transistor Radio Research Meeting, February 17-18, 1959, Folder 4, Box 33, Collection 86, BGCA, and "Minutes of World Committee on Missionary Radio: Transistor Radio Receiver Committee," in "Missionary Radio Receiver (MPR) Minutes," Liberia Box 15, Broadcasting Division, SIM.
- ⁸⁶ Letter from Abe Thiessen to Ray Davis, January 20, 1958, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁸⁷ Transistor Radio Research Meeting, February 17-18, 1959, Folder 4, Box 33, Collection 86, BGCA, and "Minutes of World Committee on Missionary Radio: Transistor Radio Receiver Committee," in Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁸⁸ Letter from Abe Thiessen to Walter Ohman, April 10, 1959, Folder 35, Box 19, Collection 86, BGCA.
- ⁸⁹ Letter from Abe Thiessen to Ray Davis, January 20, 1958, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁹⁰ Letter from Abe Thiessen to F.J. Simmonds, March 24, 1959, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM. For confusion among users over pretuning on Villagers, see letter from Sudan United Mission to Abe Thiessen, September 17, 1958 and letter from Douglas S. Quay to Abe Thiessen, July 11, 1958, Folders 43 and 44, Box 32, Collection 86, BGCA.
- ⁹¹ Letter from Abe Thiessen to Ray Davis, January 20, 1958, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁹² Letter from Abe Thiessen to Ray Davis, January 20, 1958, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁹³ Letter from Abe Thiessen to J. John, February 11, 1959, Folder 43, Box 32, Collection 86, BGCA.
- ⁹⁴ Letter from Abe Thiessen to Walter Ohman, April 10, 1959, Folder 35, Box 19, Collection 86, BGCA.
- ⁹⁵ Letter from Abe Thiessen to members of the Transistor Receiver Project, Folder 32, Box 32, Collection 86, BGCA.
- ⁹⁶ Letter from Melvin V. Donald to A.D. Helser, September 3, 1958, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁹⁷ Letter from Abe Thiessen to Walter Ohman, April 24, 1959, Folder 35, Box 19, Collection 86, BGCA.
- ⁹⁸ Letter from Abe Thiessen to Walter Ohman, April 10, 1959, Folder 35, Box 19, Collection 86, BGCA.
- ⁹⁹ Dale Graber, "Portable Missionary Radio Project," 1958, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ¹⁰⁰ Letter from Ray de la Haye to Abe Thiessen, May 14, 1958, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ¹⁰¹ Follow-up meeting of the Transistor Radio Research Committee, March 5, 1959, attached as "Appendix" to "Minutes of World Committee on Missionary Radio: Transistor Radio Receiver Committee," in Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ¹⁰² Transistor Radio Research Committee, "Minute Requesting Stop Procedure," July 22, 1959, Folder 4, Box 33, Collection 86, BGCA.
- ¹⁰³ "Report on Transistor Radio Research Committee's Unfinished Business," December 18, 1959, "Missionary Radio Receiver (MPR) Minutes," Liberia Box 15, Broadcasting Division, SIM.
- ¹⁰⁴ Letter from Abe Thiessen to Ray de la Haye, October 29, 1958, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ¹⁰⁵ Letter from Abe Thiessen to A.D. Helser, March 21, 1958, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ¹⁰⁶ Letter from Abe Thiessen to J. John, February 11, 1959, Folder 43, Box 32, Collection 86, BGCA.

¹⁰⁷ Letter from Abe Thiessen to Griffith J. Davis, December 2, 1958, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

¹⁰⁸ Letter from Abe Thiessen to A.D. Helser, March 21, 1958, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

¹⁰⁹ An extensive secondary literature exists in the history of technology on specialty and mass production. See Philip Scranton, *Endless Novelty: Specialty Production and American Industrialization, 1865-1925* (Princeton University, 1997), David Hounshell, *From the American System to Mass Production: the Development of Manufacturing Technology in the United States, 1800-1932* (Johns Hopkins, 1984), and Michael J. Piore and Charles F. Sabel, *The Second Industrial Divide: Possibilities for Prosperity* (Basic Books, 1984).

¹¹⁰ Letter from Hank Voss to Ray de la Haye, September 19, 1957, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

¹¹¹ Letter from Arthur T. Schmidt to the District Director of Internal Revenue Service, Manufacturing Excise Tax Division, April 29, 1959, Folder 35, Box 19, Collection 86, BGCA.

¹¹² Letter from Abe Thiessen to J. John, February 11, 1959, Folder 43, Box 32, Collection 86, BGCA.

¹¹³ Letter from Abe Thiessen to Rev. J.C.. Wiebe, February 20, 1957, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

¹¹⁴ Letter from Abe Thiessen to Walter Ohman, April 10, 1959, Folder 35, Box 19, Collection 86, BGCA.

Chapter 9

Commercial Transition: ELWA's PMR Program, 1960-70

Introduction

The year 1960 marked a significant turning point for broadcasting in West Africa. In late 1959, the Liberian government organized its own broadcasting service, the Liberian Broadcasting Corporation, as a tool of national development. After 1960, newly independent African governments turned to broadcasting as a means to build their fragile nations and to consolidate their often tenuous hold on power. Along with the arrival of independence, international competition for listeners heated up in the context of a renewed Cold War, as the United States, the Soviet Union, and China began competing over the airwaves for the hearts and minds of Africans.

The use of transistor radios in the mission field, pioneered by the missionary transistor receiver project, had demonstrated the dramatic power-saving capability of the new technology to missionary broadcasters. As the major experimental test site of the project, ELWA managers and technicians had experienced first-hand the benefits of transistor technology. Dale Graber, a technical manager with ELWA, expressed the widely held view in 1958 that the greatest limitation to the growth of the transistor radio market in Liberia lay on the supply, not the demand, side.¹ Given its lengthy waiting list, the station had to turn prospective borrowers away due to lack of adequate facilities. The demise of the transistor project left station officials with a strong yen for transistor radios, but no apparent way to whet their appetite.

Following the dissolution of the transistor committee in 1959, ELWA officials began purchasing large quantities of a special pretuned commercial transistor set from Philips, N.V. of Holland.² Full-scale adoption of pretuned transistor technology by the station over the ensuing decade enabled ELWA managers to overcome the structural limitations of their earlier set “placement” approach and to expand the station’s receiver program dramatically for the first time into the remote regions of Liberia’s hinterland. From 1960 to 1970, ELWA’s PMR department underwent a considerable period of growth.

The department tentatively held together the three major strands of missionary radio receiver programs during this decade: technology, commercialism, and producer control. The history of the PMR program during the 1960s showed what transistor technology allied with commercial production and missionary purpose could accomplish. Because of their reduced battery consumption, transistor radios allowed ELWA to expand large-scale operations into Liberia’s rural areas and hinterland for the first time, where nearly three-fourths of the country’s population lived and where the station’s extensive tribal broadcasts were most effective in attracting listeners away from the rival government station ELBC (which broadcast almost exclusively in English).³ Since transistor radios manufactured by Philips came pretuned, ELWA managers could expand into the hinterland without relinquishing firm control on what alternative stations listeners could pick up.

At the same time, however, the heady and historically unique mix of transistors, commercialism, and missionary control came fraught with significant consequences for the future. Expansion into the hinterland meant relinquishing control over supply and

repair channels and increased problems with battery maintenance due to the greater distances of receivers from the station. To reach distant listeners, ELWA officials gave large quantities of sets to a wide array of conservative Protestant missionary organizations - the types of missionary users discussed in the previous chapter - who then passed them on to church workers or sold them to Liberians at subsidized prices throughout the countryside. More fundamentally, as this chapter will show, use of transistor radios entailed the gradual commercialization of the PMR program. The success of officials in “capturing” large numbers of listeners (that is, regulating how they used their sets), made possible by the diffusion of the transistor radio in the region, spelt a significant loss of user control for the station, a redefinition of relations with listeners, and an ambiguous accommodation with market forces, which dramatically altered the West African broadcasting environment after 1970.

The decade of the 1960s proved a transitional one for ELWA’s Portable Missionary Receiver department, poised between the earlier regime of “social regulation” and transistor experimentation, on the one hand, and the opening of a thriving commercial market in receivers after 1970, on the other. While the experience of the missionary transistor receiver project had demonstrated that conservative evangelical missionaries could not independently produce a technical solution to the “receiver problem,” even using transistor technology, the advent of commercial forces in West Africa, beginning in 1960, sparked drastic long-term changes for missionary receiver programs in the region (as they did around the globe), as this chapter will clearly demonstrate.

Switch to Pretuning, 1959

Before 1959, ELWA officials did not employ pretuning on the Philips vacuum tube sets which the station distributed in Liberia. As detailed in earlier chapters, ELWA managers flirted with pretuning the Pye sets which it distributed in Nigeria, but abandoned the effort in response to feedback from SIM officials in Jos that Nigerian listeners would not tolerate pre-tuned radios for political reasons. ELWA officials changed course in Liberia and implemented pretuning universally on receivers which it distributed inside the country beginning in 1959 for two reasons: experience with pretuned sets produced by the missionary transistor receiver project and the formation of the commercial station ELBC by the Liberian government.

As detailed in the previous two chapters, ELWA had functioned as the major test site for the transistor receiver project as a result of Abe Thiessen's close historical ties with the station. By the end of 1958, ELWA staff had tested a total of thirteen experimental "lunchbox" sets and had received over fifty broadcast-band demonstration models from El Rad, roughly one-quarter of the total 225 sets which the PMR department staff estimated that it had distributed between 1954 and 1959. Set experiments had exposed station technicians and managers not only to the dramatic benefits of transistors, but to the potential of pretuned reception in Liberia. Unlike Nigeria, experience with experimental pretuned "lunchbox" receivers and El Rad demonstration models on ELWA's long-wave service near Monrovia posed little technical problems. Herschel Ries, ELWA's Chief Engineer, had informed Thiessen in October 1957 that pretuning on experimental sets functioned well close to the station in Monrovia: "On long wave, here

in Liberia, the pre-tuning will work, as far as we can now see....”⁴ Experimental sets convinced ELWA staff that pretuning would work in a limited Liberian setting.

The transistor project’s production run provided ELWA with more extensive exposure to the benefits of pretuned reception. Of the ‘Villagers’ manufactured in April 1959, ELWA received an additional 150 pretuned transistor radios; two-thirds of these were shortwave sets, designated for the Liberian hinterland and Nigeria. By the start of 1960, half of ELWA’s 450 total sets in circulation included both transistors and pretuning. Radios produced by Thiessen’s committee brought transistors and pretuning to the Liberian mission field in a bundled package. But pretuning did not require semiconductors to operate, nor did transistors mandate the use of fixed circuitry.⁵ A deciding factor in the decision of station managers to switch to pretuned receivers therefore lay in a second factor – the arrival of broadcasting competition

Competition from a new national station played a crucial role in ELWA’s decision to adopt pretuned radios in 1959 as did the supply of pretuned missionary sets. The key event here was the appearance of a major broadcasting rival on the AM dial in ELWA’s own backyard of Monrovia. Prior to 1959, ELWA faced almost no competition for listeners on the radio dial. In 1959, however, the Liberian government signed a joint venture agreement with the British company Rediffusion to operate a commercial station in the country on the government’s behalf under the call letters ELBC, 51% of whose stock would be owned by the company. Rediffusion introduced advertising and operated ELBC primarily as a commercial station.⁶ ELBC inaugurated broadcasts in December 1959 out of Paynesville with a 10 kW medium-wave transmitter, shortly adding a 10 kW short-wave transmitter to cover the entire country, as well as the surrounding West

African region (including Sierra Leone and Guinea). By 1963, the station would employ some thirty staff, operating on average fourteen hours a day throughout the week. Unlike ELWA, the government station broadcast mainly in English and took little interest in tribal language broadcasts, reflecting the background of its majority owners and the bias of Liberia's ruling elite, who favored targeting more immediate groups of listeners in the greater Monrovia area.⁷ Nonetheless, ELBC's English-language programming would provide a considerable challenge to ELWA broadcasters over the ensuing decade, particularly in Liberia's capitol. A survey of English-speaking listeners in Monrovia conducted by the station in 1971 confirmed that they strongly preferred the government station over ELWA.⁸

Tracking Receivers, 1959

In early 1960, following the demise of the missionary transistor receiver project, ELWA's PMR staff faced several challenges. A consequence of the program's growth burst between 1954 and 1959, the most immediate issue confronting the department involved gaining control over set distribution. Pressures to maintain data on sets had increased along with the initial expansion of the station's receiver program. Anticipating large exports of transistor sets from the United States, Ray de la Haye had recommended in late 1957 that ELWA should record serial numbers of sets, name of consignee, and date of shipment.⁹ By early 1958, American donors wrote increasingly to the station requesting the names of villages and set holders in order to pray for them, requiring station managers to better track sets.¹⁰

ELWA's PMR department expressed a pressing need in mid 1959 to gain control of the department's radio inventory before undertaking further expansion. The mindset at this early meeting demonstrated that officials still conceived of radio distribution at this early date in terms of monitoring set usage. At a department meeting in May, managers Dick Reed and David Naff recognized the "need to get control of present sets before adding any new ones," assigning officials Stan Brookman and Dale Graber the considerable task of locating ELWA's current receivers.¹¹ Finding sets also entailed regaining control over their usage. ELWA's staff estimated that 50% of sets it had placed in homes sat idle.¹² Liberian listeners were "misusing" sets loaned by the station, employing them for personal and not communal purposes.¹³

A large part of the difficulty in locating sets (and regulating their usage) lay in the distribution arrangements which department officials had made in Liberia's hinterland. By 1958, managers of the PMR program had begun relying heavily on missionary organizations working in remote parts of the country to hand out radios on ELWA's behalf. ELWA staff in late 1957 and early 1958 had strongly endorsed the use of missionary agencies to distribute receivers. Established missionary organizations, such as those listed with the Evangelical Fellowship of Mission Agencies, offered several obvious advantages to the station as delivery channels for transistor receivers. Missionaries in the field possessed the local knowledge to make placement of receivers work: "They know the needy areas and responsible people in whose hands they can place the PMRs."¹⁴ Reverend Louis Bowers of the Lutheran Mission in Sanoyea, Liberia, cited at the close of the last chapter, had given fifteen sets to itinerant evangelists who used them "very advantageously" by taking them on treks and setting them up in village

squares to attract crowds.¹⁵ ELWA had developed a successful pilot operation with the formula in Liberia, using missionaries from Mid-Liberia Baptist Union, Methodist Mission, Lutheran Mission, World-Wide Evangelization Crusade, who strongly endorsed ELWA's Portable Missionary Receiver program: "All the missionaries in Liberia have been most enthusiastic about our pmr ministry."¹⁶ By January 1961, ELWA had placed 45 receivers with thirty-five mission stations in Sierra Leone and Ivory Coast, as well as Liberia.¹⁷

Brookman and Graber relied on informational techniques to attempt to acquire control over the station's set inventory, increasingly dispersed over large areas of territory. The two managers drew up a map showing the recorded location of sets, planning to then actually find the sets and call in the ones not in use.¹⁸ Brookman mailed an open letter on behalf of the Radio Distribution Department to the various Liberian missionary organizations to whom ELWA had loaned sets. Addressing them in collegial terms as "Dear Friends," Brookman reminded recipients that ELWA had "placed several battery operated radios with various missions," giving these missions permission to then "place the radios with their own Pastors and Evangelists." The station now needed to track these radios. To do so, Brookman enclosed "Radio Placement Forms" which he asked the missionary who had placed the receiver to fill out. Forms contained vital radio data, including the "radio number" (located on back of set in pen or pencil), the "owner's name" (that is, the person with whom radio has been placed), and the "condition of radio" (indicating if the radio worked satisfactorily or not). Brookman requested that missionaries return forms to the station's Radio Distribution Department located at ELWA's Radio Village in Monrovia. Brookman also notified missionary distributors that

ELWA intended to set up a “monthly visitation program” for ELWA radios and expected mission representatives to visit the sets they had placed every month and to complete regular reports. Through the use of paper forms, Brookman thus attempted ambitiously to “discipline” the process of set distribution by determining the exact geographical whereabouts of sets and identifying their ultimate end users (or listeners).

Brookman hoped to monitor the ongoing condition of sets, along with a new follow-up program. Unfortunately, Brookman’s attempt demonstrated the degree to which the station depended on mission agencies not only to distribute sets, but also to provide a continual flow of information concerning set usage as well.¹⁹ ELWA officials possessed little leverage over how missionaries actually used sets or whether they reported data, except to cut off supplies. Frustrated over the failure of mission agencies to administer the program properly, officials eventually threatened to discontinue providing receivers to missionary distributors. PMR Administrator Dale Graber required missionaries in Liberia handling the station’s radios to complete a report detailing the exact placement and assessing the “effectiveness of the sets already placed,” before delivery of further sets. Graber used the threat of terminating supplies to coerce responsiveness: “This report will have to be turned in and a satisfactory explanation of the whereabouts and use of the sets presently out, before any new ones will be distributed.”²⁰ Yet, as will be shown further below, ELWA officials had little choice but to continue relying on missionary intermediaries if they wanted to farm out sets in the Liberian countryside.

In addition to logistical headaches with missionary distributors, ELWA’s PMR staff also encountered nuisances with the new Villagers because of their barebones

pretuning arrangement. In general, radio technicians found it far easier to pretune broadcast-band receivers than shortwave ones, since lower frequencies presented more stable signals than higher frequencies. “Technically it is unwise to pre-tune a short-wave set; however, to pre-tune a long-wave set is very advantageous.”²¹ While Villagers used on long-wave close to the station posed little difficulty, pretuning shortwave models in the hinterland posed chronic problems because of their inability to pick up more than a single frequency. In the end, ELWA’s staff decided ironically against using the recently received Villagers because of pretuning nightmares; quite a few remained in their boxes in SIM’s Nigerian headquarters in Jos. Eventually, staff would attempt to salvage the station’s nearly 40 short-wave Villagers, installing crystals on the sets which allowed two pre-tuned positions of 60 meters or 90 meters.²²

Control through the Market, 1960-1969

Following the dissolution of the transistor committee in December 1959 and the poor performance of shortwave Villagers, ELWA’s managers turned to commercial alternatives. Over the following decade, officials steadily expanded the station’s PMR program through the use of pretuned receivers manufactured by Philips N.V. of Holland. The Philips “Community Receiver,” Model B1X88T, provided comparable output to the Villager, using seven transistors powered by four flashlight batteries in a superhet design to produce 250 milliwatts of output. Most importantly, the set provided four pretuned positions, initially on 710 KHz (longwave) and 60 meters, 25 meters, and 19 meters. Officials could obtain “Community” receivers from Philips for \$35, a price \$5 lower than that charged by the missionary transistor committee for Villagers.

Use of commercial pretuned receivers was accompanied by a gradual commercialization of missionary receiver distribution in Liberia over the ensuing decade. Commercialization in the missionary context meant the substitution of monetary and market relations for traditional paternalistic and proprietary ones. In April 1960, manager Bill Thompson offered the assessment to PMR department staff members that Liberians living up-country could afford paying \$20-\$25 for sets. Following Thompson's proposal, officials engaged in an open debate about how best to distribute ELWA's radios. By early 1960, ELWA officials had realized the stark drawbacks of the set placement approach they had implemented during the first half-decade of the PMR department's history. Workers found it increasingly difficult to both expand the receiver program and enforce station usage through social conventions and legal contracts with borrowers, as noted in chapter 5.

In the end, managers of the PMR department decided to endorse Thompson's recommendation, inaugurating a significant set of changes in the station's receiver program. Henceforth, officials decided to sell receivers to listeners for the subsidized price of \$20 apiece rather than giving them away, as they had done since the receiver program started in 1954. ELWA officials agreed to a subsidized sale policy because they felt it offered a middle-of-the-road position between free placement under "social regulation" (which maximized control but minimized growth) and complete commercialization (which would facilitate rapid expansion, but with a complete loss of influence). As a compromise measure, a subsidy policy would allow for controlled growth through limited monetary exchange as opposed to complete embrace of the

market mechanism. In the estimation of ELWA's PMR staff members, it provided "the best way to control the receivers and make it possible to place more receivers."²³

In deciding in favor of the new set subsidy policy, ELWA officials felt that it would offer the station two general advantages. First, set subsidy would reduce "casual demand" for sets, instill greater pride of ownership, and increase appreciation for receivers among nationals by requiring them to contribute toward the cost of sets. Second, subsidies (versus complete reliance on the market) would allow station officials to maintain a significant degree of control over set usage. Despite the sale of sets, ELWA officials asserted control over usage of the station's sets in several ways. Philips 'Community' receivers would come pretuned on four bands, allowing radios to pick up ELWA's services exclusively anywhere in the country. Managers would carry over earlier techniques of applicant selection and weak legal enforcement mechanisms, screening potential purchasers for "interested and worthy persons" who would "mak[e] good use," even "the best use," of the radio.²⁴ Finally, station technicians would continue to offer free maintenance on the sets partly in order to continually monitor their condition and whereabouts; ELWA technicians had a corner on the repair market, since local Liberian shops as of mid-1958 could not service pretuned sets.²⁵

ELWA officials with the PMR program continued to insist on "proper usage" of subsidized sets in two key areas, suggesting that set subsidy represented a monetarization of listener relations, but not a complete embrace of the market economy. First, sets could not be transferred. To acquire the subsidized price of the set, purchasers had to still sign a contract and agree not to re-sell the radio. Station officials also set receiver prices high enough to discourage resale.²⁶ Second, managers of the PMR program still required

communal use of radios, even though they were being sold. Officials stringently required that purchasers share sets with others in order to qualify for the price subsidy. Radios had to be “used [by purchasers] to benefit others as well as themselves.”²⁷ “Under no condition,” officials stated, “is a person to have a radio for the minimum charge if he is to keep it to himself and not share it with others.”²⁸ The station ensured that sets were used communally by giving radios free to villages and to pastors, evangelists, Bible School graduate and other full-time Christian workers upon formal recommendation by missionaries.²⁹ Managers in the PMR department later expanded the free radio allowance to include “anyone willing to use and share them with others.”³⁰

Two examples provide an idea of what ELWA staff considered proper radio usage during the 1960s. In February 1965, W.R. Tolbert, President of Liberia’s Baptist Missionary & Educational Convention and Liberia’s Vice President, wrote directly to manager Dick Reed at ELWA, requesting eight radios for use in evangelistic work. Rev. E. Tyson Woods, Superintendent of Baptist Works in the Tappita area of Liberia, had established a “pilot project” in Nimba County. Woods had purchased five radios for the “special price” of \$7 ea from ELWA for use by “Native Evangelists-Pastors of the Area” to “generally assist with evangelical work there.” Since the project proved “very successful,” his successor, Rev. George Johnson, now requested eight additional sets to be “distributively sold” to the growing number of Evangelists working in the area. Tolbert’s request reflected the ruling Americo-Liberian elite’s active patronage of the gospel in the country: “I assure you that your kind cooperation in the premises can only but help spread the Gospel Ministry throughout the country.”³¹

A publicity account during the 1960s of an ELWA receiver, entitled “Double Blessing,” illustrates how ELWA’s radios could be used to influence an entire village. Robert Grear, ELWA’s Krahn language broadcaster, had given a transistor radio to Sarah Roberts, a local pastor’s widow living in the town of Zwedru, some 200 miles from ELWA’s Radio Village. Following her husband’s death, Roberts elected to stay on in the town, refusing to remarry. The Town Chief gave Roberts land and local Christians helped to build her a house and dig her a well. Grounding her antenna so that she received a strong and clear signal, Roberts placed her radio in a room of her house directly adjacent to the village well. Every morning as people come to draw water, they received a “double blessing” of drinking water and the “Living water” of the gospel provided over the radio in their own language, paralleling Jesus’ experience with the Samaritan woman described in Saint John’s gospel.³² “Double Blessing” received wide circulation within SIM; Dick Reed sent copies of the story to Abe Thiessen and other SIM officials and Ray Davis had a copy as well. In addition to demonstrating the importance of vernacular language in the communication of the gospel by radio, the account clearly illuminates what SIM officials considered proper usage of portable missionary radios.³³

Expansion of ELWA’s PMR program after 1960 not only brought the advent of commercialization, but an even more pronounced reliance on third-party distributors as well. As ELWA stretched into the Liberian hinterland, it came to depend almost entirely on missionary outlets to dispose of its receivers. Due to their geographical proximity to end listener-consumers, mission agencies and their related national partners could monitor sets far more effectively than station personnel: “The missionaries are much closer to the sets and can see that they are used properly.”³⁴ In addition to Baptist,

Lutheran, and Methodist organizations which had earlier signed up with the station, ELWA now provided radios to Pentecostal groups as well, including Assemblies of God Mission, Swedish Pentecostals, and Pentecostal Assemblies of the World, so that its program cut across the entire conservative Protestant spectrum in Liberia. Thus, use of missionary distribution channels not only increased ELWA's reliance on third parties, but broadened its ecumenicity.

Use of commercial sources, a limited subsidy policy, and missionary distributors facilitated a considerable expansion of ELWA's proprietary receiver program after 1960. By September 1963, the station had circulated 850 transistor sets in use.³⁵ By April 1965, ELWA had placed over 1,000 transistor radios in Liberia and a total of close to 1,400 total sets overall. By 1970, the station had succeeded in placing a total of 2,400 sets since 1954 at an average cost of \$28 per receiver, nine-tenths of them in Liberia.³⁶ Transistors alone made possible the dramatic growth of ELWA's PMR audience. Fully 90% of the radios distributed by ELWA's PMR department during its sixteen-year history contained transistors.³⁷ Conservative evangelicals in America financed the program. The bulk of the subsidy for ELWA's sets were "paid for by gifts of Christian friends in many places" and by "Sunday School and Church groups across North America" in particular.³⁸

Steady expansion of ELWA's PMR department after 1960 brought associated technical difficulties and challenges. The decade of the 1960s witnessed rapid influxes of transistor radios from overseas. In 1960, for example, some 125,000 transistor radios entered Nigeria, according to SIM's publication the *Sudan Witness*, with another 146,000 to follow during the first nine months of 1961.³⁹ Liberia witnessed significant growth as well; over the period, the number of sets in Liberia rose from roughly 4,000 (1954) to

160,000 (1975).⁴⁰ As the total number of transistor radios in Liberia climbed apace during the 1960s, ELWA technicians experienced new problems with repairing the rapidly growing numbers of outside sets brought to the station's shop. Since it was illegal under its license for the station to fix duty-paid equipment, and since almost all equipment in the country (except ELWA's) included duty, outside repair work not only detracted staff from other pressing technical needs at the station, but raised legal issues as well.⁴¹ In July 1968, station managers implemented a new radio repair policy, accepting only ELWA radios for repair.⁴²

The shift in ELWA's repair policy during the 1960s reflected a gradual introduction of market relations into the area of set maintenance, a key aspect of set distribution, complementing the larger commercialization of the station's receiver operations which occurred during the decade. Under its new repair policy, managers terminated free maintenance on station sets. ELWA's shop now required its customers to remove and keep old batteries, deferring the labor and responsibility of disposal. For the first time, the station levied a \$1 minimum charge for repairs and charged customers for parts costing more than \$.50 apiece. Customers had to present a repair ticket to claim radios (or be charged an additional \$.50); ELWA's repair shop accepted only cash, provided no credit, and took no financial responsibility for equipment left behind in the shop. Henceforth, ELWA treated its radio subscribers, who at one point had enjoyed both free receivers and free maintenance, strictly as consumers who paid for the station's services and who received nothing without monetary payment.

By 1968, staff with ELWA's PMR department expressed increasing dissatisfaction with the performance of Philips 'Community' receivers. While sets

performed adequately close to the station, their performance weakened with distance, suffering interference from stations in neighboring Togo. Sets experience considerable drift on 90 meters, requiring costly retuning. ELWA staff approached Philips about making several set improvements in the spring of 1968 designed to enhance reception or save the station money, including the use of tunable oscillators for the receiver's 90 meter frequency, simplification of sets to a single pretuned setting, and the use of a "minimum volume level," which would allow listeners to simply turn the set on/off with a switch rather by reducing the volume. As the members of the missionary transistor receiver committee had argued, Philips proved unresponsive to the needs of a single niche user. Indicating its waning interest in the small global pretuned receiver market, the Dutch company provided the missionary station with minimal technical support.⁴³ By September 1969, Philips had announced the momentous decision to ELWA that it had quit making pretuned sets world-wide.⁴⁴

Philips decision to end production of pretuned sets provoked a "crisis" in ELWA's PMR department, prompting an extensive internal debate (discussed below) about the future direction of the receiver distribution program.⁴⁵ ELWA officials searched the commercial market unsuccessfully for pretuned receivers and even contacted the USAID office in Liberia for a new supplier.⁴⁶ On December 25, 1970, following a set of recommendations from ELWA's Radio Advisory Council, station officials decided to formally disband the PMR Program, providing the ascendancy of the market as their principal rationale: "With radios being as inexpensive as they are now it was felt that in most cases the need for radios can be met by the people themselves here in Liberia."⁴⁷ Officials recognized that commercial manufacturers now produced readily available

inexpensive sets that “compare[d] favorably with our former PMR radios” and that were “tunable across the whole short wave band from 90 meters to 25 meters.” Listeners in West Africa could readily purchase inexpensive, multiple-band, all-frequency transistor sets manufactured by consumer electronics giants in America, Europe, and Japan and distributed through retail commercial shops in Liberia and Nigeria’s major urban centers under local, “knockdown” brand names, such as OAC (Philips), Monrovia Fair (Aiwa and Sanyo), and Rasamny (Sony).⁴⁸ Sanyo, for example, produced a set available in Monrovia for as little as \$19. As a result, it appeared to station personnel that “the need for a wholesale program of PMR is not so vital as it once was.”⁴⁹ At the same time that officials offered the ascendancy of the market as the dominant reason for dissolving ELWA’s PMR department, however, they recognized the inadequacy of their own efforts to expand radio distribution while monitoring sets: we “never felt that we had adequate control of the whole program.”⁵⁰

HCJB’s Radio Circle, 1960-1968

The demise of ELWA’s PMR program formed part of an historic global expansion of the radio receiver industry and a world-wide retrenchment of receiver programs by missionary radio stations. During a tour of Japan in 1970, Donald Miller observed that “other stations are phasing out their respective proprietary radio departments because of the availability of inexpensive sets on the market.”⁵¹ A discussion of the outcome of HCJB’s Radio Circle, tracked over the first four chapters of this dissertation, provides a fitting close to this earlier narrative. It also provides an illuminating illustration of how the emergence of a global economy in transistor radios dramatically transformed custom receiver

production and distribution efforts undertaken by missionary broadcasters throughout the southern hemisphere.

During the 1960s, HCJB developed a strong receiver program that incorporated the latest advances in transistor technology. HCJB's Radio Circle served as a model radio assembly operation and distribution program for missionary broadcasters around the world, which easily surpassed the size of ELWA's PMR department. The station produced its first transistor radios rapidly following the commercial availability of the components, putting together 700 transistor sets in 1956 with semiconductors imported from the United States.⁵² In 1962, HCJB's Radio Circle acquired its own building, thanks to a gift from a wealthy American donor; the new facility "contributed enormously to much greater efficiency and rapidity in the manufacture of radios."⁵³ By 1963, the station employed seven full-time missionaries and sixteen Ecuadoran nationals in its Quito workshop with two more in the field distributing and servicing sets.⁵⁴ Technicians developed several proprietary circuit designs, which workers printed with a silkscreen press and assembled into working units, using coil transformers wound in the shop, electronic components incorporated from the United States, and local materials, such as wood for cabinets, paint, and hardware, putting out sets in small batches of 50-100 radios a month.

The middle years of the decade witnessed the steady expansion of the Radio Circle's production program. By 1963, the station produced seven different types of transistor, tube, and electric sets on long-wave and shortwave (49 meters), enabling listeners to pick up the station clearly throughout the country.⁵⁵ By the start of 1968, HCJB had produced 12,000 radios, which it distributed throughout Ecuador. Sets came in a range of eleven different sizes and types in 1967, with as many as seven transistors, and prices

from 115 to 210 sucres (\$5-\$10), enabling the station to reach an array of listeners from Ecuador's coast to villages in the remote regions of the sierra and Indians in the Amazonian jungle.⁵⁶

Despite the large size of its receiver program, HCJB faced growing problems after 1960 due to the arrival of Japanese transistor radios which flooded the Ecuadoran market. According to J.D. Clark, the Director of the Radio Circle, the Radio Circle experienced "keen commercial competition brought about by inexpensive, efficient Japanese multiband radios" as early as 1961. In the estimation of Clark's successor, Doug Peters, the radio market in Ecuador underwent a major transformation during the half decade from 1962 to 1967; whereas in 1962, "many Ecuadorans did not own a radio," by 1967 almost everybody did. Commercial competition forced Radio Circle technicians to continually improve their circuits, as well as the size and style of radios, in order to contend. Yet managers found it nearly impossible to keep pace. While the costs of labor and materials for HCJB's custom workshop continued to rise throughout the decade, the prices of Japanese radios steadily dropped. By 1967, sales for Radio Circle sets fell below corresponding figures for the preceding year, presaging an inevitable day of accountability.⁵⁷

The flood of inexpensive Japanese receivers in Ecuador not only placed pressure on HCJB's proprietary manufacturing outfit, but prompted a shift in consumer preference. According to Peters, prospective buyers increasingly called into question the value of single-station radios, openly criticizing Radio Circle salesmen in the public fairs and markets where they tried to peddle the station's radios: "Lo malo es que solamente tiene una emisora" ("The bad thing is that they only have one station"). Peters was convinced

that people no longer wanted HCJB's custom-manufactured radios not because they did not want to listen to the station, but because they preferred to do so on "an attractive model with multibands at a good price." Touring Ecuador, Peters was confident that HCJB was the most popular station in the country. He was equally convinced, however, that most Ecuadorans now picked the station up on commercial sets, rather than the station's pretuned radios.⁵⁸

By early 1968, pressures on the HCJB's Radio Circle came to a head. In light of all the Radio Circle's rising unprofitability, Peters recommended to HCJB's board that it take the momentous action of discontinuing construction of radios at the Radio Circle, turning the department into a "follow-up" or evangelism ministry instead, which would continue to service existing radios and visit listeners in villages with sets. HCJB's board of directors promptly complied in January 1968, phasing out the station's "fabrication of pre-tuned radios" due to the "availability of inexpensive transistor radios" and formally terminating the Radio Circle program, effective July 1, 1968.⁵⁹

Peters explained the board's dissolution of the Radio Circle in a letter to its financial supporters in January 1968. Peters framed the board's decision, which he had recommended, in light of changing market conditions faced by religious broadcasters world-wide. Inexpensive transistor radios had become so plentiful around world that HCJB no longer needed to compete in production with the existing market. Peters articulated that radio capture had provided a dominant feature and incentive of the Radio Circle ministry for nearly two decades: "Since 1949 HCJB has enjoyed a captive audience of listeners on their pre-tuned radios." But Peters conceded that expansion of the world market for

transistor radios meant the demise of capture as a mode of listener relations for the station, since HCJB could no longer control what stations consumers chose.⁶⁰

While noting the demise of capture as a mode of listener relations, Peters observed a simultaneous shift in broadcast practices and listening habits that accompanied changes in the global receiver market. The availability of commercial sets, Peters pointed out, had led to increased competition for audiences and greater independence of listeners: "... we are seeing the exodus of the captive audience and the advent of the competitive audience." Listeners desired greater freedom than pretuned sets allowed: "...the listener wants to select for himself his stations and his programs." Peters vindicated the close of the Radio Circle and the demise of radio capture by claiming commercialization of HCJB's receiver operations would provide the station with significantly more listeners and hence a potentially far greater yield of converts. Peters suggested that HCJB begin to draw and retain listeners primarily by producing attractive programming. The availability of commercial sets provided "a potentially larger listening audience for HCJB than ever before." Given the growth of competition, missionary broadcasters would have to win over audiences by providing them what they liked or wanted.

Debates and New Directions (ELWA), 1970

The end of pretuned commercial receiver production in Liberia formed part of a larger historical change in the African radio broadcasting market. If Africa had become "radio conscious" in 1954, by 1970 the continent had perhaps begun adolescence. Following independence, listeners in many countries turned increasingly from international shortwave sources to proliferating national, regional, and local medium-

wave outlets, which also provided listeners more consistent signals.⁶¹ Changes in the West African broadcasting environment, coupled with the dissolution of ELWA's own receiver program, prompted deep thinking on the part of ELWA officials. In March 1970, Don Miller, Follow-Up Director and audience research coordinator at ELWA, circulated a proposal which called for the full commercialization of the station's receiver program, prompting an exchange of memos with senior management and extensive discussion among PMR staff members concerning the future direction of the station.

Miller's proposal involved the application of principles and ideas from the American marketing and wholesale industries to the field of missionary broadcasting. Miller suggested ELWA become a strict clearinghouse for commercial receivers modeled after "discount stores, sales and PR schemes" in the United States, buying tunable receivers at wholesale prices from manufacturers (at savings as great as 30%) and selling them to any interested party at market cost rather than for a subsidized price. In order to identify the sets with ELWA, station personnel would paint the station's letters on the set's face and mark the station's frequency on the dial. Retail repair shops, such as the Sony shop in Monrovia, would take over servicing of sets from the station.⁶²

Miller anticipated numerous advantages would accrue to ELWA from his "wholesaling" proposal. First, the plan would promote a favorable image of ELWA in a new broadcast market environment by providing listeners with valuable consumer services, helping them to procure radios less expensively and even listen to non-ELWA programs. Second, the plan would provide free advertising for ELWA via its insignia on the radio, which could make a "perpetual" impression by striking the listener at "an optimum time" as he or she chose stations. Third, the proposal made "sound business"

sense and would attract donors because invested capital would create a steadily maintained revolving fund. Fourth and finally, the use of commercial repair shops envisioned in the plan would reduce pressure on an over-stretched technical department at ELWA.⁶³

Miller anticipated opposition to his proposal. In Miller's view, the most serious criticism of his plan lay in the moral objection of conservative evangelicals that unregulated media would promote abuse. Miller responded to this protest by frankly conceding that his plan would allow listeners to easily tune to ELBC (the Liberian government's broadcast service) on AM, but he justified the move on the grounds that his proposal would attract new listeners to ELWA who would not go near a pretuned set. Second, Miller dismissed the charge that engaging in wholesale commercial activity would undermine ELWA's religious mission, since the station would not make a profit. On the contrary, Miller argued, the market would "significantly increase" the station's prospect of communicating to consumers the message of the gospel by reaching a far broader swathe of listeners. Finally, Miller did not anticipate his proposed course of action would upset local merchants, given the small share of ELWA's market and because discounting (or underselling) represented "fair marketing practice."⁶⁴

Miller's proposal mattered enormously for two overall reasons. First, it signified ELWA's "wholesale" reliance on market mechanisms to distribute receivers, capping a decade-long evolution in ELWA's PMR policy. Miller's memo marked the transformation of the station's receiver program, from a set of close relations with set borrowers established under the regime of "social regulation" during ELWA's first five years, to a purely commercial exchange between unrelated parties through the

instruments of a cash nexus and the market economy. Second, Miller's plan would formally end any lingering interest on the part of station managers in regulating usage of sets, still in force under the department's subsidy policy, such as group use, since a follow-up relationship would no longer exist between set purchasers and the station. To compensate for the loss of control over listener behavior implicit in his proposal, Miller employed a rhetoric of numbers, arguing that his plan would produce far more total listeners and hence a far greater supply of potential converts for the station.

Taken together, Miller's proposal marked the demise of "radio capture" as a technical mode of listener relations in favor of consumer relations. Miller recognized that selling radios wholesale would end all attempts by the station to regulate how listeners used sets. Henceforth, the station would relate to its listeners as consumers. Rather than attempting to restrict listener preference, Miller's proposal flattered listeners on their ability to act independently:

"It recognizes that buyers are people who are able to think for themselves when it comes to choosing programs. It does not leave them with the impression that somebody else has to choose their programs for them."

Instead of relying on receivers to capture listeners, Miller suggested "that ELWA depend on its programming to capture and retain an audience." In so doing, his proposal put "a strong responsibility" on ELWA "to produce programs" that met "the needs of the audience," thus marking a major shift in the marketing strategy of the station.

Jon Shea, a high-level manager at ELWA, endorsed Miller's proposal and addressed the plan's most glaring weakness: loss of pretuning.⁶⁵ Shea labeled the objection to the use of unregulated receivers "deliberate temptation." He openly

questioned whether conservative evangelical broadcasters could countenance the practice: “Can we reconcile a position of providing opportunity for listeners to choose programming contrary to the Gospel message?” Shea responded to this rhetorical question by providing an instrumental justification of pretuning on grounds of strict technical rationality rather moral expediency, as Abe Thiessen had once done:

“In the end, I think pretuned sets are amoral, and so are tunable sets. The best justification for pre-tuned sets is their easy tuning. If they are not available, that does not erase the other purposes of PMR ministry.”

Viewing pretuned sets as amoral, Shea argued that the burden of responsibility for deciding how to use radios rested not with program producers, engineers, or station personnel but squarely with consumers and listeners who purchased receivers and operated the dials of their sets: “Every good thing can be perverted, and the onus is finally on the consumer, not the supplier of the good thing.”⁶⁶

Shea’s technical justification of pretuning fit neatly with Miller’s market approach to distributing radios, since the two adopted similarly instrumentalist outlooks. Like Miller, Shea assumed a liberal model of consumer behavior, emphasizing the cardinal market principle of *caveat emptor* (“Buyer, beware!”). In Shea’s view, pretuning offered a mere technical expedient, rather than a mandatory requirement of the PMR program. By subtly transforming the *a priori* requirement of pretuning to the technical standard of “easy tuning,” Shea lifted the heavy moral weight surrounding the practice of fixed circuitry and helped to rationalize Miller’s market approach. Shea’s emphasis on the autonomous action of individual consumers complemented Miller’s emphasis on the market role of radio manufacturers and broadcast producers, each of whom needed to compete in the commercial marketplace for listeners. Taken together, Miller and Shea’s

model of receiver distribution thoroughly eradicated any notion of paternalism and shared moral or religious obligation between broadcasters and listeners in the mission field, which had guided the thinking of earlier ELWA officials.

The development of a strong receiver market in West Africa, along with growing competition on the radio dial, prompted ELWA officials to reappraise the station's goals and alter its general broadcasting strategy and overall tactics.⁶⁷ Miller and Shea helped to spearhead a major shift in ELWA's marketing strategy by 1970 in favor of formalized audience research and the production of attractive programming. As ELWA's Research Director, Miller organized the effort to launch ELWA's first formal audience response. Officials identified ELWA's clear need for "more statistical description of the potential radio audience in their target areas."⁶⁸ They singled out the need to increase the station's listening audience and attract new listeners, particularly "the young in the Liberian culture," as the most important purposes of research.⁶⁹

Emphasis on audience research reflected a rethinking of ELWA's market strategy. Beginning in the summer of 1968, the ELWA Survey Department had conducted an extensive mail response survey, soliciting responses through the mail from over a thousand listeners in Liberia and Nigeria through an elaborate three-page questionnaire that amassed extensive personal data and information about listener habits and program preferences.⁷⁰ Reviewing results from the survey in June 1970, Shea jotted down some telling thoughts:

"If music is the key, is it not time we developed some Liberian musicians & set the standard here? ELBC mostly borrows Western stuff – what is it about that music which appeals? The beat? Is beat bad in Africa? Music is a huge area & maybe something requiring some original research & planning on our part."⁷¹ (emphasis in original)

Shea's short but meaningful note indicated officials' willingness at ELWA to not only experiment with new forms of music entertainment traditionally off limits to conservative evangelicals (music with a "beat"), but their openness to conducting extensive research and designing new programs in order to attract new audiences. Confronted with a novel broadcasting environment, managers such as Shea were clearly more concerned now with attracting consumers, particularly young audiences, through means such as attractive music, than with capturing listeners through control of their receivers, which had become impracticable.

Shea did not have to wait long for appropriate results. In January 1970, ELWA published its first formal audience survey— an extensive national poll conducted by an outside polling agency of 1,200 listeners in both Monrovia and the rural Liberian market.⁷² In January 1971, station officials engaged in formal market research for the first time with an express view to preparing new programs, conducting a Music Preference Test survey of over fifty prospective listeners from the "emergent" social class in order to develop a new "magazine type" music program.⁷³ Following the results of its two surveys, officials adopted a new program format in the winter of 1971 during its peak afternoon broadcasts, designed to reach young city workers and students through customized contemporary music, which made up over three-fourths of the program, and "one-minute presentations of the gospel, interspersed with news and short items, concerning sports, homemaking and family life."⁷⁴ By 1971, then, ELWA had clearly turned an important corner, adapting a radio capture approach inherited from an era of closed monopoly to the marketing practices of a new, highly competitive broadcast environment.

Conclusion

Commercializing Missionary Radio Reception

The 1960s brought a new broadcasting environment to West Africa. On the transmitting side, a host of new national, regional, and international stations flooded the region's airwaves in the wake of independence and the revival of the Cold War on the continent. On the supply side, advances in high-frequency semiconductor research in the late 1950s meant that by 1960 low-cost transistor radios were available for African consumers for the first time in large quantity. Unlike other regions in the world, the multiplication of broadcast facilities on the African continent produced a distinct asymmetry; while only a handful of private or commercial broadcasting stations existed on the continent in 1970 (including ELWA), governments across the continent left it to private industry to supply reception facilities, resulting in a steady growth of commercial transistor radios on the continent as market opportunities opened up.

ELWA officials responded creatively, flexibly, and effectively to changes in the West African broadcasting environment, expanding their program over the decade by gradually emulating adapting commercial practices in several areas related to set distribution: acquisition, sale, and finally maintenance. By 1970, ELWA was a regional success story. The station provided "the only practical source of Gospel by radio for West Africa"⁷⁵ Looking back over the fifteen-year history of the PMR program after its close, Jon Shea could characterize it as a limited success: "Pretuned radios have satisfied the needs of low price, fairly good quality, low-cost repairs, and easy tuning to ELWA."⁷⁶ Thanks to the transistor radios which flowed into the area, ELWA reached effectively into Liberia's hinterland for the first time, where its signal was considerably stronger and

its extensive tribal broadcasts far more effective than its rival ELBC.⁷⁷ According to its 1970 listener survey, English-language speakers in the hinterland preferred ELWA to ELBC. Further evidence existed that ELWA had amassed a solid, devoted listener base by 1971. According to the results from ELWA's direct mail survey, over 90% of its listeners tuned in the station daily, considerably more than the other stations they listened to on a regular basis: ELBC (65%), BBC (28%), and VOA (22%).⁷⁸

This chapter has traced the changes in ELWA's PMR program that made a significant expansion during the 1960s historically possible. Three main developments facilitated ELWA's success: the use of transistors, commercialization (the introduction of first monetary and later market relations), and reliance on third-party missionary distributors. Commercialization was a gradual process that started with the use of radios commercially produced by Philips (following the dissolution of the transistor receiver committee), continued with the adoption of a limited subsidy policy, carried on with revisions to the station's repair policy, and culminated in the termination of the PMR program in favor of cheaper commercial radio alternatives. The influence of commercialism was also reflected in Miller's and Shea's proposals, which enjoyed widespread support among officials, and in the widespread research and marketing changes introduced at the station after 1970. Commercialization and missionary distribution bore an important common thread: the loss of control which accompanied the expansion of ELWA's receiver program. As this chapter has shown, extension of influence over geographic territory and through the market meant paradoxically a loss of control for missionary broadcasters because they entailed dependence on third-parties and outside instruments.

The commercialization of ELWA's receiver program was not a recent occurrence, but had a long pre-history four decades long. As this dissertation has shown, the roots of missionary radio lay in American religious broadcasting practices which were modeled after commercial stations and exported to the mission field by Clarence Jones in 1931. Receiver programs at missionary stations, from HCJB's Radio Circle in the 1930s to ELWA's PMR department in the late 1950s, regularly relied on commercial supplies of radios to make up for shortages in the field. Paid or sponsored programming by American religious producers proved a staple for cash-starved missionary broadcasters that helped to carry the enterprise. Commercialism represented a constant threat to the spirit of missionary radio evangelism, as Clarence Jones articulated, since it threatened to substitute the goal of profit for that of converting souls. Yet, as Miller and Shea's memos demonstrated, the practice of evangelical broadcasting in the mission field proved vulnerable to the *geist* of commercial activity.

The experience of ELWA between 1960 and 1970 showed that the commercialization of receiver operations meant the end of broadcaster control of listeners through the primary medium of technology. Officials could no longer control how listeners used sets when they relied on the market to supply them. To influence listeners, officials turned understandably to the domain which they knew best, vernacular broadcasting, a trademark of Protestant evangelistic activity since the Reformation. During the remaining three decades of the twentieth century, missionary broadcasters would excel at foreign language program production. As the Introduction to this dissertation stated, IRB's developed an amazing proficiency in this area by the 1980s, easily outdistancing their larger government rivals, who did not possess the motivations and could not match the

local resources on the ground possessed by IRBs and their national partners. Henceforth, vernacular language production would become the new stamp of missionary broadcasting – an equally distinctive characteristic as the regime of radio capture which preceded it, but one far more suited to the liberalization of global broadcasting which continued into the twenty-first century.

¹ Dale Graber, “Portable Missionary Radio Project,” 1958, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM International Archives (SIM), Fort Mill, SC.

² Advertisement for Philips B1X88T, *B.G.T. Monitor*, February 1961, in the Philips Company Archives, Eindhoven, The Netherlands.

³ Alhaji G.V. Kromah, “The Utilisation of Broadcasting for National Development in Liberia,” in George Wedell, ed., *Making Broadcasting Useful: The African Experience* (Manchester University, 1986), 201; J. Gus Liebenow, *Liberia: The Evolution of Privilege* (Cornell, 1969).

⁴ Letter from Herschel Ries to Tom Gilmer and Hank Voss, October 26, 1957, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

⁵ Missionary stations such as Station HCJB in Ecuador and FEBC in the Philippines had employed fixed reception on crystal and vacuum tube sets built by their stations beginning as early as 1949, as ELWA’s managers knew full well.

⁶ Alhaji G.V. Kromah, “The Utilisation of Broadcasting for National Development in Liberia,” in George Wedell, ed., *Making Broadcasting Useful: The African Experience* (Manchester University, 1986).

⁷ Francis Bebey, *La Radiodiffusion en Afrique Noire* (Issy-les-Moulineaux (Seine), 1963).

⁸ Daystar Communications, “A Study of the English-Speaking Radio Audience of Liberia,” January 1970, Liberia Population (1971), Audience Survey, Liberia Box 23, SIM.

⁹ Letter from Ray de la Haye to Abe Thiessen, August 27, 1957, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

¹⁰ Letter from Ray de la Haye to Abe Thiessen, May 14, 1958, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

¹¹ “Receiver Distribution Report,” May 11, 1959, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

¹² “Radio Distribution Meeting,” September 9, 1960, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

¹³ “Radio Distribution Meeting,” September 9, 1960, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

¹⁴ Letter from Ray de la Haye to Abe Thiessen, May 14, 1958, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

¹⁵ Letter from Ray de la Haye to Abe Thiessen, May 14, 1958, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

¹⁶ Letter from Ray de la Haye to Abe Thiessen, August 27, 1957, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

¹⁷ “P.M.R. Committee Meeting of February 15, 1961,” February 15, 1961, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

¹⁸ “Receiver Distribution Report,” May 11, 1959, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

¹⁹ Open letter, Stanley Brookman, August 28, 1959, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

²⁰ “Special P.M.R. Committee Meeting,” April 22, 1965, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

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- ²¹ "Portable Missionary Radio Project," October 25, 1960, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ²² "Information relative to Council Meeting," undated (ca February 1961), Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ²³ "P.M.R. Meeting of Nov. 24, 1961," November 24, 1961, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ²⁴ "Special PMR Committee Meeting," October 19, 1967, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ²⁵ Abe Thiessen, "How Best to Distribute Receivers," Report of the Second Conference on World Missionary Radio, June 12-14, 1958, Folder 16, Box 34, Collection 86, BGCA.
- ²⁶ "P.M.R. Meeting of Nov. 24, 1961," November 24, 1961, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ²⁷ "Special P.M.R. Committee Meeting," April 22, 1965, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ²⁸ "P.M.R. Meeting," September 3, 1963, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ²⁹ "P.M.R. Committee Meeting of February 15, 1961," February 15, 1961 and "P.M.R. Meeting of Nov. 24, 1961," November 24, 1961, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ³⁰ "P.M.R. Meeting," September 3, 1963, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ³¹ Letter from W.R. Tolbert to Dick Reed, February 23, 1965, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ³² See Chapter Four of the Gospel of Saint John.
- ³³ "Double Blessing," undated (ca. mid-1960s), Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ³⁴ Letter from Dick Reed to Russell Mapes, June 9, 1965, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ³⁵ "P.M.R. Meeting of Nov. 24, 1961," November 24, 1961, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ³⁶ "PMR Proposal," September 26, 1970, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ³⁷ Of roughly 2,400 total sets distributed, approximately 2,187 were transistorized.
- ³⁸ Letter from Dick Reed to W.R. Tolbert, March 2, 1965, and letter from Dick Reed to Russell Mapes, June 9, 1965, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ³⁹ Reported in David R. Enlow, "The Religious Caravan," *The Alliance Witness*, The Christian & Missionary Alliance, December 12, 1962, p. 9.
- ⁴⁰ United States Information Agency, Office of Research and Intelligence, "World Wide Distribution of Radio Receiver Sets," December 31, 1957, Folder 5, Box 33, Collection 86, BGCA; UNESCO, *Statistical Yearbook 1998* (UNESCO Publishing and Bernan, 1998).
- ⁴¹ Memo from Jon Shea to "Fred," August 26, 1968, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁴² "ELWA - PMR Radio Repair Policy," (ca. July 1, 1968), Beginnings (1956-1969), Broadcasting Division, Liberia Box 14, SIM.
- ⁴³ "PMR business," May 1968, Beginnings (1956-1969), Broadcasting Division, Liberia Box 14, SIM.
- ⁴⁴ Letter from Bill Thompson to Art Baumann, USAID, Liberia, September 26, 1969, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁴⁵ Ray Coddington, "PMR Program: Critique of Don Miller's Proposal Dated March 25, 1970," undated, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁴⁶ Letter from Bill Thompson to Art Baumann, USAID, Liberia, September 26, 1969, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁴⁷ "PMR Proposal," September 26, 1970, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

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- ⁴⁸ “PMR Proposal,” September 26, 1970, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM; “Proposed PMR Policy for Commercial Sets,” December 12, 1972, Beginnings (1956-69), Broadcasting Division, Liberia Box 14, SIM.
- ⁴⁹ “PMR Proposal,” September 26, 1970, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁵⁰ Letter from Draper to Ray de la Haye, October 21, 1968.
- ⁵¹ “PMR Proposal,” September 26, 1970, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁵² Osborne Blunden Buchanan, “A Study of the Pioneer Missionary Radio Station, HCJB” (Master’s thesis, Kennedy School of Missions, Hartford Seminary Foundation, 1962), 227.
- ⁵³ John Clark, Director, “Report of Radio Circle,” Annual Meeting: January 1963, “Radio Circle Minutes,” HCJB Archives (HCJB), Colorado Springs, CO.
- ⁵⁴ “Radio Circle: Report to Abe VanderPuy and Nancy Woolnough,” October 1963, File 396, HCJB.
- ⁵⁵ “Radio Circle: Report to Abe VanderPuy and Nancy Woolnough,” October 1963, File 396, HCJB.
- ⁵⁶ Untitled brochure, “Radios Vozandes de la HCJB,” undated, File 396, HCJB.
- ⁵⁷ Memo from Douglas C. Peters to the Board of Trustees, November 21, 1967, “Backup Materials to Board Minutes,” HCJB.
- ⁵⁸ Memo from Douglas C. Peters to the Board of Trustees, November 21, 1967, “Backup Materials to Board Minutes,” HCJB.
- ⁵⁹ Minute 2397, “Re-Consideration of Radio Circle Ministry,” Board Minutes, January 1968, HCJB.
- ⁶⁰ Letter from Douglas C. Peters, Director, Radio Circle, to “Dear Friends,” January 18, 1968, File 396, HCJB.
- ⁶¹ Ray Coddington, “Guidelines and Thoughts on ELWA’s Ministry,” October 1970, Beginnings (1956-1969), Broadcasting Division, Liberia Box 14, SIM.
- ⁶² Don Miller, “PMR Program: Proposal by Don Miller,” March 25, 1970, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁶³ Don Miller, “PMR Program: Proposal by Don Miller,” March 25, 1970, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁶⁴ Don Miller, “PMR Program: Proposal by Don Miller,” March 25, 1970, Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁶⁵ Jon Shea, untitled (“PMR Purposes”), undated (ca. 1970), Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁶⁶ Jon Shea, untitled (“PMR Purposes”), undated (ca. 1970), Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁶⁷ Ray Coddington, “Guidelines and Thoughts on ELWA’s Ministry,” October 1970, Beginnings (1956-1969), Broadcasting Division, Liberia Box 14, SIM.
- ⁶⁸ Don Miller, untitled document, “Plans for audience research...,” Audience Survey (1968), Liberia Box 24, SIM.
- ⁶⁹ Anonymous, “Liberian Radio Survey,” undated, Audience Survey (1968), Liberia Box 24, SIM.
- ⁷⁰ ELWA Survey Department, “Dear Radio Listener,” undated; memo from Don Miller to Ray Coddington, June 4, 1970; and letter from Rev. Eluzai Gima Munda, with attached “Radio Questionnaire, July 30, 1968, all in Audience Survey (1968), Liberia Box 24, SIM; Cecilia Johnson, Joseph Flumo, and George S. Raynes, “ELWA Direct Mail Survey,” Audience Survey (1970), Liberia Box 24, SIM.
- ⁷¹ Note from Jon Shea, attached to memo from Don Miller to Ray Coddington, June 4, 1970, Frequency Distribution (1970), Audience Survey, Liberia Box 23, SIM.
- ⁷² Daystar Communications, “A Study of the English-Speaking Radio Audience of Liberia,” January 1970, Liberia Population (1971), Engineering and Audience Survey, Liberia Box 23, SIM.
- ⁷³ “Radio ELWA Audience Research Report – Monrovia Panel “A,” Music Preference Test,” Music Preference (1971), Audience Survey, Liberia Box 23, SIM.
- ⁷⁴ Anonymous, “The Religious Caravan,” *The Alliance Witness*, The Christian & Missionary Alliance, June 23, 1971, p. 11.
- ⁷⁵ Jon Shea, untitled (“PMR Purposes”), undated (ca. 1970), Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.
- ⁷⁶ Jon Shea, untitled (“PMR Purposes”), undated (ca. 1970), Missionary Radio Receiver (MPR) Minutes (1953-1970), Broadcasting Division, Liberia Box 15, SIM.

⁷⁷ J. Gus Liebenow, *Liberia: The Evolution of Privilege* (Cornell University, 1968), p. 79

⁷⁸ “ELWA Data,” Audience Survey (1970), Liberia Box 24, SIM.

Concluding Reflections: Missionary Radio as Cultural Legitimation

This dissertation has used the cultural history of technology to tie together three broad subject areas: international broadcasting, conservative evangelical American religion, and radio reception. Through an historical study of HCJB and ELWA, the dissertation has demonstrated how receiver programs at conservative evangelical American missionary radio stations on two continents wove values, religion, and radios together to produce a potent cultural export over four decades.

The dissertation has taken as its major historical setting the over-arching “receiver problem” in the “Third World” after 1945. The conservative evangelical response to the lack of reception facilities in developing countries such as Ecuador and Liberia showed the dynamic creativity of a range of personnel affiliated with missionary stations, including pioneers (Clarence Jones), station workers (Marion Krekkler), station builders (Bill Watkins), project managers (Abe Thiessen), and engineers (Hank Voss). Missionary broadcasters at HCJB and ELWA redefined the receiver problem (a shortage of affordable radios) as a problem of capture (a shortage of appropriate radios), expanding the notion of “reception” to include not simply radio hardware, but proper “software” (or technique) as well. At the same time, as the dissertation has shown, acute radio shortages and the challenges imposed by tropical environments, combined with difficulties of collaboration between missionary engineers, station officials, and agencies, heavily constrained missionary broadcasters in their self-appointed task of world evangelization by radio.

As its primary standard of interpretation, this dissertation has adopted the point of view of its major actors, missionary broadcasters. Adopting a “broadcaster perspective” in the dissertation makes methodological and hermeneutical sense. The dissertation’s sources originate in IRB archives; they provide major insight into the mindset of the architects who designed and built missionary broadcasting systems. Using archival material from two IRB’s, this dissertation has provided an-actor based account of two major international religious broadcasters during the formative era of missionary radio from its genesis in 1931 through its transition to the commercial transistor era in 1970. Such an account considers the context and motivations of missionary radio’s founders and principal organizers and narrates the precise methods they adopted to accomplish their stated purpose.

As the wealth of anecdotal and impressionistic evidence from IRB archives assembled make clear, missionary broadcasters believed overwhelmingly in the spiritual mandate, divine unction, and practical validity of radio as a means of evangelization in the mission field. Two representative samples suffice to summarize here. Following a survey of missionary stations around the world in the summer of 1964, HCJB President Abe Van Der Puy concluded that “many people have placed their faith in Christ after hearing the gospel by radio,” as demonstrated by letters written by converted listeners to missionary stations.¹ Edwin Kayea, an African official in ELWA’s programming department, maintained that the station had made a sizable impression on the Liberian population: “The impact that ELWA’s broadcasting has made upon the people of Liberia in particular has been almost sensational in many respects, and deeply satisfying spiritually, as well.”² The key point, made throughout the dissertation but reaffirmed

here, is that missionary broadcasters believed firmly that what they were doing represented not a weighty and unavoidable responsibility that mattered enormously for the spiritual well-being of the populations of the countries which they targeted.

The dissertation has analyzed the material reception of missionary radio as its prime focus. The historical significance of missionary radio reception lay in broadcasters' realization that religious conversion generally occurred through a continual process of cultural exposure rather than a one-time experience. The point of conceiving missionary reception as capture, the major theme of this thesis, is not necessarily in the large number of listeners affected (which were often a small percentage even of total religious listeners to the station). Instead, capture mattered historically because it distilled the essence of missionary radio as a continual and repetitive practice, as opposed to an occasional activity, and one which successfully embedded a "mundane" "western" technology in a very different social and cultural environment. It is the type of regularized exposure to the gospel epitomized by capture using the airwaves which broadcasters found most often produced converts and generally transformed cultures. Missionary broadcasters remained committed, first and foremost, to directly producing individual converts (and reveled when they did), but they displayed a remarkable perception, as well as steadfast patience, in their longer-term, more subversive task of undermining dominant cultural attitudes and altering the basic assumptions of their target audiences through the use of broadcasting day in and out. "Religious" radio, in this sense, carried a dual connotation for broadcasters, referring not simply to the actual content of programming, but to the method of dedication with which listeners received the message.

While unflagging in purpose, missionary broadcasters over four decades displayed immense flexibility in the choice of communication means. Broadcasters with Stations HCJB and ELWA relied, alternatively, on socialized solutions and communal listening in resource-scarce environments, on technological solutions typified by the use of pretuned radios, and finally on the commercial marketplace to accomplish their overall objective – producing conversions through regularized listening (which the dissertation has referred to in shorthand form as capture). Missionary broadcasters highly prized the radio’s unique qualities of repetition, pervasiveness, and mundaneness because they believed these capabilities helped breed legitimacy for their religion in new, foreign environments. People were less likely to convert to a religion they perceived as odd. Missionary radio reduced the “unfamiliarity” of American conservative evangelical religion in numerous parts of the world by making it a frequent and “normal” part of everyday experience. Radio’s ubiquity stemmed partly from its ethereal nature. Radio performed its task of penetrating listeners’ lives with the message of the conservative evangelical (American) faith imperceptibly. In its method of operation, the enterprise of missionary radio resembled an iceberg; while it produced obvious results (conversions), ninety percent of its sizeable mass lay submerged out of sight beneath the water.

In the remainder of the conclusion, the dissertation offers a series of related reflections on the historical significance and interpretive meaning of missionary radio. In Part I, the conclusion situates missionary radio historically by placing it within the framework of the larger conservative evangelical movement. In Part II, the conclusion suggests three useful interpretive contexts for understanding missionary radio, relating to the three major topics of the dissertation, international radio, religion, and reception,

respectively. Within these areas, the dissertation examines three subjects, in turn: the exceptionalism of IRBs, the ambiguities of evangelical modernity, and the process of radio capture as a type of reception and form of listener relations. In closing, the dissertation suggests that the role of missionary radio in the rise of a post-1970 Southern-based world Christianity reaffirmed the basic function of cultural legitimation ascribed to radio by missionary broadcasters.

The Historical Significance of Missionary Radio

Missionary Radio and Conservative American Evangelicalism

This dissertation situates the historical importance of missionary radio within the primary frame of reference of the traditions and institutions of American conservative evangelicalism. Missionary broadcasters believed with considerable passion that evangelization of the world by radio comprised a vital and urgent task. As a result, they devoted immense amounts of time, energy, and money to pursue it over the several decades studied here. Quentin Schultze has demonstrated convincingly that the “mythos” of the electronic revolution has remained central to contemporary American evangelical identity, despite periodic doubts about the effectiveness of religious radio and television programming.³ The question must then be asked: why did missionary radio clearly matter so greatly to its advocates? I maintain that missionary radio mattered to conservative American evangelicals because it fulfilled two basic functions for the conservative American evangelical movement. Missionary radio legitimized conservative evangelicalism and it rationalized world evangelism.

Missionary radio legitimized conservative evangelicalism abroad in two ways: by removing barriers to conservative evangelicalism and by opening doors for the gospel. Missionary broadcasters believed adamantly that radio reduced barriers to the preaching of the gospel. Advocates stressed how radio overcame political restrictions and geographical limitations, which often constrained the use of traditional, face-to-face missionary methods. Radio also reduced barriers of language and culture, since it eliminated the huge investments required to prepare individual missionaries for the field. In its publicity, HCJB argued that radio penetrated the barriers of poverty and literacy, since even the poor had radios, thanks to the station's receiver programs.⁴ In their discussion of reducing barriers, advocates of missionary radio tended to equate the physical properties of radio signals as electromagnetic waves (namely its ability to pierce material barriers) with radio's symbolic power to overcome social, economic, and moral impediments as well. Missionary broadcasters thus conflated various categories of resistance to the gospel, believing that a technological solution would reduce every kind of obstruction simultaneously. In the words of an African station worker with ELWA, radio possessed "evangelistic value" through its "persistent and barrier breaking contact with the masses of unsaved [sic]."⁵ For missionary broadcasters, "barrier breaking" provided both a literal description and a metaphoric representation for radio's quasi-magical capacity to level a range of obstructions to the conservative evangelical cause.

In penetrating barriers, radio opened doors for the gospel, often literally into people's homes. Inside the home, conservative evangelicals gained a far more considerable foothold than in the public marketplace. Writing in staunchly Catholic Ecuador of 1944, HCJB publicity boasted that missionary radio helped overcome the

impenetrable walls of “[f]anaticism, bigotry, and prejudice” by reaching into the intimacy of the listener’s home, where missionaries found individuals far more willing to give the gospel an audition.⁶ Clarence Jones believed that radio excelled in “breaking down the walls and barriers of prejudice that have been built up against the missionary and his message” in hostile environments such as Catholic Latin America. Radio, Jones argued, allowed the listener “to hear and judge for themselves the value of the message, right in their own homes, secluded from outside influences that would prohibit them from other contacts with the gospel.”⁷ Missionary broadcaster Art Zylstra with Station K-ICY, writing in Alaska in 1964, reached a similar conclusion:

“One native pastor testified to the difficulty in door-to-door witness in his home village prior to KICY. Now, he says, he can knock on any door and they are glad to see him and anxious to discuss spiritual matters. This, I believe, is where MR [missionary radio] is a valid and valuable tool.”⁸

Missionary broadcasters believed that radio worked in a highly effective manner by gradually changing people’s attitudes. Edwin Kayea at ELWA cites instance of how vernacular broadcasts of the gospel over radio removed “scorn” for Christian members of his own Gio tribe in Liberia by reducing the unfamiliarity of the “strange belief.”⁹ An imperceptible agent, radio acted silently to alter basic belief systems.

Leading scholars of evangelicalism have identified legitimization as one of the most important functions of evangelical media overseas. In their study of fundamentalist broadcasting in Guatemala, the Latin American country with the highest proportion of evangelicals, Susan Rose and Quentin Schutze noted that radio and television during the 1980s comprised “important conduits for the transmission of fundamentalist values, beliefs, and practices throughout the country,” providing legitimacy for Protestant fundamentalism and making it socially acceptable for Roman Catholics to jump faiths.¹⁰

The major function of missionary radio was thus an ancillary, indirect, and often hidden one. Missionary radio provided a means to expose the gospel to people unfamiliar with its claims over an extended period of time. Manager Dave Jones of missionary Station HRVC in Honduras viewed main task of missionary radio as laying foundations rather than direct evangelism:

“... we visualize radio as a means of penetration and introduction of the Gospel into hearts that heretofore have not been friendly to the message. “Line upon line, precept upon precept” is the way we view our ministry. We are building the foundation of spiritual truths into the hearts and minds of our listeners which one day will produce a new birth and thus a new life.”¹¹

Broadcasters “sowed seeds” of the gospel while other individuals and organizations (local preachers, national evangelists, and mission agencies) later reaped the fruit through direct contact with radio listeners in personal encounters, small church settings, or large revival gatherings. Van Der Puy’s experience in Ecuador in the late 1950s confirmed this support aspect of HCJB’s radio ministry: “we have heard many testimonies by men and women in gospel services who affirm that they found doors open to them because the people visited listened consistently to some gospel broadcast.”¹²

Missionary broadcasters often characterized radio’s legitimation function in aggressive, militaristic terms. By penetrating barriers and opening doors, conservative evangelicals believed that radio functioned as a type of “avant garde” of the missionary movement, preparing the way for a main ground assault by troops who presented the gospel in person. The “winged missionary,” a piece of HCJB publicity proclaimed, represented “a new-world-encompassing method to vanguard missionary advance[,] and back up and assist existing traditional missionary endeavors.”¹³ Referencing the recent success of the new branch of the American military during WWII, Clarence Jones

characterized missionary radio as “God’s Air Force.” Like the air force, radio penetrated behind enemy lines, eliminating sources of enemy resistance in preparation for occupation by gospel foot soldiers. Pretuned radios, which provided a continual missionary presence in remote regions and areas often hostile to the gospel, performed a unique work in Jones’ opinion of “penetrating barriers, softening up operations and providing effective repetition to the Gospel message.”¹⁴

In addition to legitimizing conservative evangelicalism abroad in countries reached by missionary stations, radio broadcasting helped to rationalize the task of worldwide evangelism for the conservative evangelical movement. In attempting to evangelize the globe during the twentieth century, conservative evangelicals were confronted by a simple problem of staggering global proportions: a shortage of resources (especially labor) and a massive, rapidly growing world heathen population. In 1945, Clarence Jones estimated that only 2% of world had “vital” religion.¹⁵ In May 1956, J.C. Percy, Executive Secretary of the Interdenominational Faith Mission Association (IFMA), the dominant conservative evangelical mission agency, estimated that the world’s population of 2.65 billion people had grown by nearly 10% over the previous three-year period. Calculating that IFMA’s 36 mission societies and affiliated 6,300 missionaries in 95 countries had spent a mere \$12 million in 1955 (compared with \$8.7 billion spent on advertising by American businesses), Percy concluded alarmingly: “The world population is constantly increasing but without a commensurate increase in spiritual activity to reach these souls for Christ.”¹⁶

Conservative evangelical broadcasters believed overwhelmingly that radio technology constituted a divine provision in the twentieth century given to the Church for

the express purpose of evangelizing the world. Given the small percentage of true believers in the world, the rapid rate of total population growth, and the relatively limited resources of their missionary movement, conservative evangelicals faced a veritable crisis in missions if they were to evangelize the globe during the twentieth century. Technology, in the form of radio, provided a solution to this crisis. Shortwave broadcasting represented a means for conservative evangelicals to familiarize the teeming populations in the far corners of the globe with their claims in an economical and efficient manner.

Fulfillment of the Great Commission provided a cornerstone of conservative evangelical identity and practice, unifying the diffuse and often fractured movement around a “single, all-consuming purpose:” the evangelization of the globe. Premillennial theology predominant in conservative evangelical circles linked the earthly return of Christ to the prior fulfillment of the Great Commission by the church. The sense that the end of the earth was near and Christ’s return immanent, combined with a conviction that unsaved souls faced an eternal damnation, provided conservative evangelicals with a deep sense of urgency in their task of spreading the gospel world-wide. Missionary broadcasters clearly perceived radio’s value in terms of its ability to expedite the fulfillment of Christ’s commandment:

“Our Lord said, “Go ye into all the world and preach the Gospel to every creature.” This is the clear call for missionary radio ministry. We have a job to be done throughout the whole world... This is God’s view, and must be our view, of our great missionary radio opportunity throughout the world today.”¹⁷

HCJB publicity identified the purpose of radio with the Great Commission clearly in 1944: “Perhaps in no other age has God given to His people a vehicle for Gospel

dissemination so potent and powerful as radio for the carrying out of the Great Commission.”¹⁸ By enabling conservative evangelical groups to reach politically and geographically inaccessible areas, radio technology facilitated the preaching of the gospel to all nations:

“Here is a modern way of efficiently reaching the masses who cannot be approached in any other manner. Radio, the winged messenger for the gospel, has been reserved, in the providence of God, for the church of the twentieth century to employ in reaching the regions beyond.”¹⁹

In Abe Thiessen’s estimation, the missionary transistor receiver represented the “greatest advance for the gospel in our generation” because it allowed mission organizations to maintain a permanent presence in villages that individual missionaries could visit only once or twice a year.²⁰ By maximizing the limited resources of their missions movement and by extending their reach to the remote “regions beyond,” radio broadcasting represented an indispensable, providential tool for the purpose of completing the church’s job.

Missionary radio rationalized global evangelism in two senses. First, it applied rationalized practices to the task of world evangelization. This included primarily the use of broadcast technology itself, but also entailed a broader emphasis on proper technique as well to reach the lost.²¹ Broadcasters’ wholesale adoption of numbers and statistical categories as indicators of broadcast impact (such as the number of broadcast hours, program languages, and letters received), though questionable as objective measures of effectiveness, evidenced a deeper-seated faith in the technical management of the evangelization process. Statistics reduced the enormous and often overwhelming task of preaching the gospel to the entire world to a manageable size. Formulas could prove to missionary broadcasters, as well as their domestic supporters, that the business of world

evangelization was well in hand. Faith in technique also extended to the sphere of radio reception in the field. Missionary broadcasters' stress in receiver programs on the use of proper technique reflected a deeper, underlying confidence that God would honor proper methods with proper results, namely a harvest of souls.

In addition to the formalizing the task of world evangelism, use of technology and technique provided a critical rationalization for the global evangelization project among conservative evangelicals. However questionable its effectiveness, missionary radio allowed the American conservative evangelical movement to maintain that it had discharged an important global spiritual responsibility, namely the fulfillment of the Great Commission. Whether or not radio actually produced sizeable numbers of converts abroad (and this proved especially difficult to know), its supporters believed that it did (or could). Statistics demonstrated empirically that the gospel had been sent out to every living creature over the airwaves. Bold faith in power of technology and the effectiveness of world evangelization by radio (as a technique) mattered as much as actual, demonstrable results, since they shored up a critical point of identity that held the conservative evangelical movement together.

Interpreting Missionary Radio

The dissertation places the history of missionary radio reception in three interpretive contexts, relating to its three central foci: international radio, religion, and reception. It also attempts to illuminate the exceptionalism of American international religious broadcasting, the ambivalence of evangelical modernity, and the dynamics of reception as a process of capture, respectively.

Explaining IRB Exceptionalism

American international religious broadcasting combined three unique elements: an evangelical commitment to missions, features of radio as a communication medium, and an American set of religious values. The combination of these three elements best explains the distinctiveness of missionary radio and the exceptional performance of IRBs historically compared with other public and private (commercial) international broadcasters.

As an Anglo-American religious tradition, evangelicalism was particularly well-suited to the mission field. In 1792, William Carey published his seminal treatise, calling Christians to missionary action and launching the modern missionary era. Carey's choice of title was telling: *An Enquiry into the Obligations of Christians to use means for the for the conversions of the Heathens*. Evangelicals had an "obligation" to find and use all "means" to convert the heathen. The enormity of the moral commandment, combined with the severity of the task and the urgency of the timeframe warranted a high degree of latitude in the choice of means. It was the sense of moral fervor and the instrumental openness conveyed by Carey's title which fueled the historic growth of the Protestant world mission movement in Europe and North America during the nineteenth century. Evangelicalism and missions were linked from the start. The modern missions movement was the direct offspring of the evangelical revivals of the late eighteenth and early nineteenth centuries. Given their revivalist roots, evangelical Protestants were the most active, the most dynamic, and the most effective missionaries in the world. Unlike other Protestants, they felt a compulsion to tell the good news; the call comprised a distinctive hallmark, even birthright, of their movement. An instrumental outlook derived

historically from the revivalist bent and missionary outlook of the evangelical tradition. Given the urgency of their task, evangelicals easily justified modern technology (including radio in the twentieth century) as a critical tool for world evangelization.

Evangelical missions were well-suited to radio for two reasons, stemming from the nature of the evangelical message and the aurality of radio as a medium of communication. Evangelicals believed that salvation required simple faith in the gospel rather than membership in a church or participation in sacraments. As an individual experience, conversion could (and did) occur in a wide array of locales - in homes, at work, on the road – and did not require the presence of a pastor or the intervention of a priest. By contrast, conversion for mainline Protestant denominations involved participation in church life and the entire transformation of an individual's indigenous culture along Western lines.²² Mainline Protestant denominations, such as the Lutherans and Presbyterians, set up broadcasting stations overseas after WWII, though on a far smaller scale than evangelicals; compared with their evangelical counterparts, they experienced only marginal success and limited influence.

Listeners wrote letters to missionary stations which testified to their religious conversion. In such letters, listeners overwhelmingly identified the meaning of their radios with a deep evangelical strain of religious experience, involving a sense of personal sinfulness, a need for individual salvation, and a conversion through faith in Jesus Christ's blood shed on the cross. A single example of a listener testimony given here, received by Station ELWA, connects the impact of missionary broadcasting with its strongly evangelical character and radio's power to penetrate into the home. Emanuel

Ephriam, a clerk in Kumasi, Ghana, described how the repetition of the gospel message over radio eventually culminated in his changed life:

“It did not take me one sermon to teach me the Truth of God. I thank God he was very patient with me and as I sat though all English broadcasts [by evangelist Howard Jones] He slowly opened my understanding to His vital Truth... One day I got so burned that I decided to do something about my state. After a sermon over the air, as the invitation was offered, I bowed my head and asked the Lord to take over my life. I shut off the set, went into my room and knelt down and prayed again. Thus was I won over to the Lord’s side.... Since then I have had many sorrows, but the power of the new birth has kept me trusting still. I know I am saved, and nothing can shake this assurance out of my soul. Thank God for it, and it was all by RADIO!” [emphasis in original]²³

Such letters, which abound in IRB archives, attest equally to the importance which listeners placed on publicly testifying to their evangelical conversion by contacting station officials, with whom they felt a personal bond.

Not only was salvation an individual experience for evangelicals, but it was an aural one as well. Christianity as a religion could trace its roots back as a form of oral communication to the first-century Mediterranean world where the faith had largely circulated by word of mouth. In the evangelical tradition, the cornerstone of the salvation experience, faith, was tied directly to aurality. Missionary broadcasters linked their justification of missionary broadcasting directly to the aural power of radio, often quoting the well-known words of St. Paul (Ro 10:17):

“God’s Word says, “Faith cometh by hearing, and hearing by the Word of God.” Millions of our African people today have the opportunity, which they never have had before, to hear the Word of God. Radio is affording this opportunity.”²⁴

Since Saint Paul himself tied faith to hearing, it was straightforward, even logical to utilize a method of communication that provided millions (even billions) with immediate access to God’s words by listening. In promoting missionary radio over traditional

missionary methods (which relied on face-to-face encounter), Jones argued from the Bible to carefully distinguish visual from aural dimensions of gospel presentation:

“There is nothing in Scripture to indicate that a man must *see* the person whose voice he *hears*. Faith in Christ can still come to a heart where the Word is preached, though it comes through a microphone hundreds of miles away -....”²⁵

Missionary broadcasters conceived of their task as first and foremost ensuring that the voice of the gospel was universally transmitted and hence could technically be heard around the world, even if from great distances. Radio broadcasting, the “winged messenger,” literally ensured that every person on earth had access to the gospel – and broadcasters readily produced numbers of broadcast hours and program languages to show it. As the experience of the receiver programs covered in this dissertation has demonstrated, however, ensuring that the voice of the gospel was transmitted was one matter; ensuring that people actually heard the message was a separate, and far more difficult, question.

Evangelical success with radio in the mission field derived not only from the appropriateness of the medium to the evangelical message, but from the suitability of radio to the mission field as well. In his phenomenology of media, communication scholar Marshall McLuhan characterized radio as a “tribal” medium due to its aural nature.²⁶ Though a modern technology, radio as an aural medium had important resonances with pre-modern cultures, particularly in the non-Western world. Radio (both secular and religious) worked in numerous parts of the developing world partly because it connected with illiterate groups and with traditional, oral-based societies. As an aural medium, radio presented advantages to missionaries over traditional written communication. Aside from making the gospel message accessible to vast sectors of the

population in developing countries who could not read, radio's aural format gave it a personal, even intimate emphasis lacking in the literature, Bible translations, Scripture tracts, newspapers, and magazines, distributed by missionaries.

Missionary radio combined evangelical purpose and broadcast technology in the mission field in a unique manner. At the same time, the conservative evangelical missionary receiver distribution programs reviewed in this dissertation evidenced a distinctly American set of religious values. These values included faith in technology and technological instrumentalism, quantification, voluntarism, and predilection for market forces in the sphere of religion and radio.

Conservative evangelical broadcasters believed strongly that technology would help solve the problem of world Christianization as part of a new wave of post-WWII missionary expansion. Clarence Jones held a particularly high faith in technology, as evidenced by his optimistic projections for HCJB's postwar mass receiver program. The missionary organizers of the Transistor Radio Research Committee in Chicago, notably Abe Thiessen and Hank Voss, demonstrated a similar belief in the power of technology to solve the receiver problem in a manner satisfactory to missionaries in the field. Missionary broadcasters in Ecuador and Liberia maintained optimistically that pretuned transistor radios ("Mechanical Missionaries") would perform critical functions in the project of world evangelization that flesh-and-blood missionaries could not, overcoming prejudicial barriers and reaching remote, even hostile regions for the gospel.

Since its inception during the colonial era, American evangelicalism has demonstrated a prominent attitude of technological instrumentalism – a willingness, in historian George Marsden's words, to use "any responsible means" to save souls.²⁷

Charles Finney, the nineteenth century revivalist, epitomized the instrumental bent in American evangelicalism:

”The results justify my methods. Show me the fruits of your ministry, and if they far exceed mine as to give me evidence that you have found a more excellent way, I will adopt your view.”²⁸

As this study of missionary radio has clearly shown, conservative evangelical broadcasters clearly evinced the pragmatic, instrumentalist outlook characteristic of American evangelicals such as Finney. Radio missionaries justified their pragmatism by citing the experimental missionary approach of Saint Paul: “I have become all things to all men, so that by all possible means I might save some.” (1 Co 9:19-22) Jones’ inventive attitude toward missionary broadcasting clearly distinguished the content of missionary radio from the medium:

“While the message we have to give is sacred, and needs no change, the methods we use to propagate it are not necessarily sacred and should be changed to meet the advanced opportunities afforded by each succeeding generation... Because a method is new does not necessarily mean it is wrong or unworthy of trial; and because a method is old and had proven useful does not mean it remains useful now and should be preserved.”²⁹

As for Finney, the acid test for Jones in choosing particular broadcast methods lay in their effectiveness – i.e., whether the method worked, as measured by various kinds of data and statistics.

An early twentieth-century Japanese observer commented presciently on this obsession with quantification as a peculiar characteristic of American religion:

“Americans *must count* religion in order to see or show its value... To them big churches are successful churches... To win the greatest number of converts with the least expense is their constant endeavor. Statistics is their way of showing success or failure in their religion as in their commerce and politics. Numbers, numbers, oh, how they value numbers!...”³⁰

As discussed earlier, the American evangelical project to evangelize the globe by radio demonstrated a clear such faith in numbers. Missionary broadcasters calculated not only the exact number of broadcast hours, programs, and languages, but the precise number of times they preached the gospel each month. At Easter 1944, HCJB broadcast 500 “gospel messages” a month, publicity noted.³¹ By late 1944, the number mounted to 600 “gospel messages” a month in 14 languages around the world over 4 transmitters.³² Nor did this trend diminish by century’s end. Evangelical demographers of world Christianity have calculated the exact quantity of “evangelism-hours per year” and “hearer-hours (offers) per year” conducted by Christians world-wide, the latter of which exceeded 1 billion in 2004.³³

As this dissertation has demonstrated, missionary radio evinced a strong entrepreneurial spirit and a voluntaristic attitude to religion that bordered on a free-market approach. Given evangelicalism’s roots as a non-denominational coalition of churches and fundamentalism’s more immediate origins as a loose, informal movement in the 1930s, combined with the decision of missionary broadcasters to abstain from forming churches, it is understandable that missionary stations HCJB and ELWA played down the distinctive liturgical or ecclesiastical trappings of Protestantism over the air in favor of a highly personalized religious experience, mediated solely by the radio receiver.

Unlike government stations overseas which offered religious programming, the missionary radio enterprise heavily favored private (vs public) ownership of the means of communication and adopted commercial broadcasting in the United States as its standard of practice. The dissertation shows that commercialization of missionary receiver operations did not occur suddenly in 1970, but emerged gradually over four decades,

dating back to the origin of missionary broadcasting itself in 1931. Missionary radio stations shared an ambivalent relationship to commercial forces, as reflected in this dissertation, since commercial radios offered the possibility of larger audiences but spelled a loss of control for broadcasters. While skeptical that a market spirit would dilute their religious purpose, broadcasters in Ecuador and Liberia nonetheless embraced components of commercialism over time in their receiver programs, until formally disbanding their proprietary receiver programs altogether in favor of the marketplace.

Overall, conservative evangelical missionary radio provided a powerful, and historically unique, mix of American values and a religion particularly well-suited to both missionary expression and communication by radio. The heady combination of American religious values and evangelical spirit in the field of missionary radio made IRBs an enormous success and a formidable presence on the radio dial, despite their small size compared with official government services. As suggested here, their unique heritage, make-up, and purpose made IRBs noteworthy exceptions in the history of international broadcasting.

Understanding Evangelical Modernity

Religious historians have generally identified religious fundamentalists in terms of the ideational content of their belief system. By this standard, scholars have frequently depicted fundamentalists as anti-modern, since they reject many of the principle tenets underlying modern Western industrial liberal democratic society, such as secularism and naturalism. Yet, as several historians of American religion have pointed out, most notably George Marsden, Martin Marty, and Randall Balmer, characterizing Protestant

fundamentalism predominantly in terms of ideas, rather than practices, produces several anomalies and makes fundamentalists look more backward and less modern than in fact they are.

Historian Joel Carpenter has presented a view of conservative evangelicals as “progressive” fundamentalists based on an analysis of fundamentalist institutions and practices during the formative interwar period.³⁴ Building on Carpenter’s work and radio scholar Tona Hangen’s early history of fundamentalist radio in the United States, this dissertation has defined conservative evangelicalism principally in terms of its creative engagement with technology. The “progressivism” of conservative evangelicals represented a highly selective response to the condition of modernity, centered principally on the use of media forms and practices.¹ Liberal Protestants adjusted to a series of broad social, economic, cultural, and intellectual changes in America, beginning in the late nineteenth century, by adjusting their theological interpretation of the Bible and embracing social activism. By contrast, conservative Protestants (or fundamentalists) maintained a rigid orthodoxy in interpreting Scripture and rejected the major intellectual currents of twentieth-century Western thought. In order to make peace with the modern world, conservative evangelicals did not modify the content of their religion (as their liberal counterparts did), but instead appropriated tools and techniques from contemporary society to communicate their interpretation of the Christian gospel.

¹ Use of the term “progressive” to describe fundamentalists raises a host of hermeneutical problems. Here, I stick close to Carpenter’s usage to connote religious groups who actively engage in utilizing the tools of modern industrial civilization for their own selective purposes, rather than in simply opposing the advance of modernity. “Progressive” here implies forward-looking and in step with the advance of the larger society, rather than “reactionary,” or backward-looking to a particular, often idealized period of the past. As stated earlier, there is no reference intended to the larger Progressive movement in American history *per se*.

The dissertation has analyzed how the distinctly American evangelical engagement with modernity played itself out overseas. The forward-looking face of conservative evangelicalism was often more evident during the course of the twentieth century in the mission field than at home. Abroad, “progressive” fundamentalists embraced the progress of Western, industrial civilization as a positive force because it provided the instruments and opportunities for global evangelization. As a “pioneer missionary broadcaster,” Clarence Jones inspired the imagination of other young fundamentalists to use modern technology, such as radio and aviation to advance the cause of the gospel.³⁵ As this dissertation has shown, Station HCJB innovated the use of radio in missions, setting the standard for a major post-WWII expansion of broadcasting by the conservative evangelical movement. After the war, missionary broadcasters forged creative new solutions to the endemic shortage of receivers encountered in developing countries, modeling receiver programs after HCJB’s path-breaking Radio Circle. In addition to technology, fundamentalists and kindred neo-evangelicals created new forms of organization to further their evangelistic purpose. Between 1960 and the mid-1980s, roughly 300 such religious groups were created in the United States, nearly doubling the postwar total to 500. The new form of voluntary association grew more rapidly in the United States after WWII than church denominations, which they outnumbered by the mid-1970s.³⁶ Parachurch service units soon defined the American evangelical movement and reorganized the contemporary American religious landscape.

Yet, as I have argued, the evangelical appropriation of modernity in missionary broadcasting contained significant ambiguities, even if implicit tensions were not always

clear to broadcasters themselves. Missionary broadcasting's expression of evangelical modernity blended conservatism, pragmatism, and a note of urgency:

“Three factors are involved in developing God’s plan for the gospel: [the message, the man, and the method]... Of these three, the *message* is basic, unique, powerful, effective. It *never changes* with time, place, or conditions of the bearers.... The *method* man uses may change... Neither the man nor the method is sacred or permanent in this world-reaching plan of missions. Only the message is sacred, abiding, and it *must* get through!”³⁷

Missionary broadcasters like Clarence Jones completely divorced the content and the medium of gospel communication. They read the gospel in ahistorical terms as a set of pure facts or information, devoid of interpretive context. In order to gain the attention of listeners, conservative evangelical broadcasters, in turn, harnessed the appeal of novelty, reminiscent of revivalist Charles Finney:

“New techniques and expressions are necessary from time to time to awaken attention and bring the gospel to bear upon the public mind.... The object of our measures is to gain attention and you *must* have something new.”³⁸

To convey their message, conservative evangelical missionaries contextualized (or “indiginized”) the gospel into local cultures, translating the Bible into vernacular idioms and providing national radio announcers to read programs in local languages. Yet missionary broadcasters displayed a singular unwillingness (or inability) to reflect on how their own worldviews informed their particular interpretation of Scripture and how the electronic communication of the gospel overseas through radio reflected, as it shaped, a particular American evangelical expression of religion.

This study of missionary receiver programs has demonstrated that missionary broadcasting did not possess a “pure” gospel message distinct from a “pure” medium of radio communication. As historians of technology have shown, technology and society

(or culture) are mutually shaping forces, rather than separate categories. The viability of missionary radio assumed (even as it defined) an extensive social network of relations between missionary broadcasters, listeners, and various groups in the United States. Reception practices, in turn, molded the experience of religion for listeners in the mission field as much as the symbolic content of missionary programming itself, which it reflected. As Jesus had warned the Pharisees in his parable, the elements of the “old wine” (the gospel) and the “new wineskins” (technology) could not be easily or meaningfully disentangled either in theory or in practice, despite the rhetoric of missionary broadcasters to the contrary. Instead of separating the two, missionary radio combined religious tradition and communication technology together to create a powerful, transnational expression of evangelicalism. Old-fashioned message and new-found medium joined to form a potent vehicle that inter-laced revivalist conceptions of religion with American values and the power of radio communication, carrying the evangelical good news via the airwaves to distant listeners across the globe.

The successful operation of missionary radio entailed capturing not only listeners, but the gospel itself. Missionary broadcasters found a certain construction of religious experience conducive to intercultural electronic missionary communication and enframed a distinct American evangelical expression of the gospel in a unique set of broadcasting practices in order to produce converts. Broadcasters believed that the efficacy of missionary radio mandated not letting the new wineskin of broadcasting dilute or adulterate the old wine of the gospel. While they routinely altered the mediums they employed, missionary broadcasters undertook concerted efforts to preserve their timeless interpretation of the “old, old story” so that it did not change. The success of missionary

radio rested on broadcasters' implicit, and illusory, faith in the instrumental purity of radio and the hermeneutical purity of the gospel - a fideism which appeared to produce results and work. By "capturing" the gospel – containing, sealing, and preserving it from historical decay – conservative evangelical broadcasters believed that they would achieve their ultimate procedural victory, the evangelization of the world for Christ.

Missionary receiver distribution programs reflected the ambiguities implicit in evangelical modernity. Was missionary capture a progressive or reactionary phenomenon? Was co-production with listener as users an instance of indiginization and "glocalization" (global-local collaboration) or a material form of producer control?³⁹ While the dissertation shows how missionary broadcasters developed a pragmatic approach to questions of reception, implementing a range of innovative social and technical solutions to the receiver problem, missionary broadcasters in Ecuador and Liberia prior to 1970 deployed these innovations to control listener behavior and hence produce conversions. The complex answers to these questions, while not fully developed here, illustrate that missionary broadcasters maintained a symbiotic dependence with modernity, willing to appropriate its wineskins but not to taste its wine.

Listeners into Hearers: Appreciating Missionary Radio as Capture

The last of the three interpretive contexts discussed in this conclusion concerns the area of reception. As the dissertation maintains, missionary broadcasters during the period 1931 to 1970 conceived of reception primarily as a process of capture. Capture represented a particular historical response by missionary radio stations to the receiver problem encountered in developing countries during the middle decades of the twentieth

century. Reception in the mission field was, first and foremost, a question of physical means. In the setting of the “Third World” after WWII, the near complete lack of radios, especially in poor rural areas, posed a staggering problem which threatened to cripple the effectiveness of new missionary radio stations. In the second instance, however, the receiver problem for missionary broadcasters represented not just a shortage of *affordable* receivers (hence an economic question), but of *appropriate* receivers as well (hence, also a cultural question). Universal adoption of pretuned transistor radios en masse by missionary radio stations around the world after 1960 enabled these stations for a time to simultaneously expand audiences and regulate listener behavior, betraying the underlying ethos of the missionary radio enterprise as one of capture. In the long run, however, the combination of transistor technology and pretuned circuits, balancing audience size and control, proved a transitory phenomenon.

The dissertation traced the genealogy of the practice of capture, beginning with the founding of the missionary radio enterprise, reaching maturation in the universal adoption of pretuned transistor radios, and culminating in the rise of a commercial receiver market. Three broad shifts in the overall strategies used by missionary broadcasters to capture audiences were described. During a first period from 1931-1945 in Ecuador and from 1954-1960 in Liberia, broadcasters relied on a regime of “social regulation” to maximize the scarce number of sets in their possession. During a second period, after 1949 in Ecuador and after 1960 in Liberia, broadcasters turned to technology, primarily in the form of pretuned transistor radios, in an effort to capture large audiences. Finally, after 1970, broadcasters in both Ecuador and Liberia turned to

the market, conceding to the commercial global economy in radios and accepting listeners' new role as consumers.

As the dissertation has shown, “reception” for missionary broadcasters involved not just providing a baseline of hardware, but coordinating proper usage of sets (or technique) as well. The effectiveness of missionary broadcasting, according to HCJB publicity, required the “sane spiritual use of radio in the mission field.”⁴⁰ As Abe Thiessen wrote to missionary Derek Porter in 1958, the missionary receiver had tremendous potential if the operator possessed “sufficient vision to use this means properly” rather than wasting it on frivolous purposes such as entertainment.⁴¹ Ensuring proper usage of radios, in turn, led missionary broadcasters to engage actively in building receivers and regulating how they were used by listeners, reflecting a typical American concern with solving problems and a results-oriented approach.

Missionary efforts to actively promote listenership of the gospel between 1931 and 1970 raised important questions about the nature of religious radio listening. What did “hearing” the gospel, as St Paul described it, mean? Was it a primarily physical or spiritual process? What role, if any, did human agency and technology as human praxis play in it? American missionary broadcasters answered these questions typically by their actions rather than through lengthy reflection. “Hearing” the gospel was far from a passive activity for conservative American evangelicals. Missionary engineer Hank Voss made this clear in 1957:

“It is not enough to set up a transmitter and erect a tower and spout gospel seed hour after hour and leave it to fall to the ground where it may. There must be a definite effort to get it planted in the heart of the listener.”⁴²

Missionary broadcasters did not leave the “hearing” of the gospel to chance, or to the supervision of the Holy Spirit alone. Instead, in line with evangelicalism’s Arminian theological roots (which emphasized the role of human will over divine grace in the election of the faithful), broadcasters took a typically activist view of human agency, emphasizing the human contribution to the process of salvation. Rather than sit on their heels, broadcasters distributed radios to produce an audience for the gospel and intervened to maximize positive spiritual reception of the message (or “hearing”) through coordinated usage of radio sets.

The difference between listening to and hearing the gospel epitomized the transformation which broadcasters envisioned would take place in listeners through radio capture. While radio listening could comprise a passive, often background activity, hearing for missionary broadcasters required active attention and effort. In addition, hearing involved an element of perception, a realization of spiritually revealed truth as opposed to natural discernment. For missionary broadcasters, capture entailed turning radio listeners into hearers of the gospel. This process required deliberate effort on the part of broadcasters, who relied on two principal features of radio to accomplish their task: regularized listening, or repetition, and broadcasting into the privacy of the home. Habitual listening reduced the power of prejudice through the force of time and familiarity, while home listening removed the social pressures and constraints of the outside world. Clarence Jones summarized the ethos of radio capture in 1945: “Radio allows the missionary to project the message of salvation into the homes of the listeners time and time again under the most favorable circumstances of attractive presentation and undivided attention.”⁴³ Radio capture, then, meant regular domestic listening.

Between 1931 and 1970, the dissertation traced the evolution of radio receivers from scarce objects of ritualism to everyday items, showing how missionary broadcasters adapted flexibly and creatively to shifting broadcast environments to pursue their overall objective of evangelization, making optimum use of the “transistor revolution.” Over the four decades and clear shifts in strategy, the commitment of conservative evangelical broadcasters to transform missionary radio station listeners into gospel hearers did not waiver. Nor did broadcasters alter their basic *modus operandi* – namely, legitimation through consistent repetition of the gospel message in the home setting – even after the close of missionary receiver departments in 1970. The global diffusion of transistor radios after 1970 made Christian broadcasting a part of everyday life for millions of people in Africa, Asia, and Latin America, providing a larger platform for missionary activities. Scholars such as Paddy Scannell and Michel De Certeau have showed how the phenomenological format of radio, particularly its dailiness, produced a religious framework for listener experience.⁴⁴ After 1970, missionary broadcasters capitalized on the daily feature of radio to continue legitimizing conservative evangelical religion through frequent repetition of their message, transforming casual radio listeners into gospel hearers. Although broadcasters could no longer influence how consumers used sets, they could still shape their attitudes through attractive religious programming (and thereby “capture” them in a cultural sense).

The attempt by missionary broadcasters to turn radio listeners into gospel hearers through capture during the period covered by this dissertation was not a simple or one-sided process. As suggested earlier, capture embodied evangelicalism’s ambivalent stance towards modernity. The history of missionary receiver programs from 1931 to

1970 demonstrated, furthermore, that no simple “technological fix” existed for the problems faced by missionary broadcasters in developing countries. Technological choices inevitably involved serious trade-offs for missionary stations. ELWA’s adoption of commercial transistor receiver technology after 1960, for example, coupled with the emergence of a commercial receiver market in the West African region, required station officials to typically decide between growing audiences and regulating listener habits and eventually to close down the station’s PMR department.

The history of radio reception in the mission field between 1931 and 1970 demonstrates that the success of material capture required the existence of a closed broadcasting environment. The mechanism of capture did not operate in a social vacuum or ahistorical context, but required an appropriate human setting and a particular socio-economic environment in order to function according to evangelical priorities. This finding concurs with the historical experience of official broadcasters in politically closed countries, such as Nazi Germany, the former Soviet Union, and Communist China, and apartheid South Africa. In these settings, governments impose propaganda on subject populations through totalitarian control over the physical means of radio distribution (such as wired loudspeaker systems in communist countries) or hegemonic influence over reception of the radio spectrum (such as the German *Volksempfänger*, or “People’s Radio Receiver” and government-issued FM receivers in South Africa).⁴⁵ IRBs differed from these cases, however, in one important respect. As non-state actors, IRBs had no political control over target audiences. As a result, the missionary radio stations studied in this dissertation took advantage of economic underdevelopment and lack of market access to control listener behavior.

Unsurprisingly, conservative evangelical broadcasters continue to use large amounts of pretuned radios today, primarily targeting poor and isolated populations in closed areas of developing countries without access to commercial radio markets. Galcom International, a Canadian-based missions group, distributed over 400,000 solar-powered, pretuned AM, FM, and shortwave radios by September, 2004 in 101 countries, including Albania, Romania, Mexico, and Haiti. Working with over 150 mostly American conservative evangelical groups involved in missions work, Galcom has targeted poor people who could not afford radios located in “refugee camps, cities, prisons, institutions and isolated language groups,” as well as in remote villages and rural homes, many of whom lacked electricity or battery power.⁴⁶ Trans World Radio (TWR) distributed free FM sets that function as pretuned radios to children and other “needy people” in urban areas in Africa, enabling them to pick up broadcasts from TWR stations in Malawi, Mozambique, Zimbabwe, and South Africa.⁴⁷

Looking Forward: The Post-1970 Impact of Missionary Radio

The missionary receiver programs of Stations HCJB and ELWA appear to have made little major impact in distributing receivers or producing widespread conversions in either Ecuador or Liberia, respectively, by 1970, the point at which the dissertation concludes. Barely one-tenth of Ecuadorans owned radios in 1975,⁴⁸ although the figure had risen to over 300 sets per thousand people by 2000 – roughly one radio for every three Ecuadorans.⁴⁹ Whereas only a handful of Protestants lived in Ecuador in 1900, by 1986 Protestants (almost entirely Pentecostal and Evangelical) comprised a small but significant minority within the country, with 250,000 members out of a population of 8

million, or 3% of the total.⁵⁰ David Stoll estimated that conservative Protestants would make up 15.7% of Ecuador's population by 2010.⁵¹ In Liberia, a population of 2.5 million owned an estimated 160,000 sets by 1975, for a ratio of 64 sets per thousand people, a figure which would increase five-fold over the following two decades, until in 1996 roughly one-third of Liberians owned radios.⁵² Christians in Liberia in the early 1970s represented 31% of the country's population – a figure significantly lower than many other black African countries at the time and roughly on par with the average for the world's population.⁵³

The widespread diffusion of inexpensive transistor radios, the “transistor revolution,” helped to solve the “receiver problem” in the southern hemisphere during the later decades of the twentieth century. The number of radios in Africa grew dramatically from 1.5 million (1950) to 10 million (1965) and 20.0 million (1975) before nearly quintupled in the ensuing decade to approximately 95.0 million (1986).⁵⁴ Overall, between 1965 and 1986, the number of receivers in Latin America quadrupled from roughly 35 million to just under 135 million – or eventually one for every three people overall on the continent.⁵⁵

Despite a lack of significant growth prior to 1970, missionary radio stations such as HCJB and ELWA helped lay groundwork for an explosion of conservative Protestantism of historic proportions around the world during the remainder of the twentieth century. From 1970 to 2005, the size of the Southern Church had increased two and a half times to over 1.25 billion members. The most dynamic source of growth during this period was Independent (evangelical or Pentecostal) Protestant churches, which increased at nearly twice the rate of other Christian groupings. The continent of

Africa showed the most dramatic regional growth. By 2005, nearly one of five Christians in the world came from Africa.

The expansion of the Southern church was accompanied after 1970 by the sizable growth of religious broadcasting. The number of Christian radio and television stations in the world quadrupled in the last quarter of the twentieth century to more than 4,000 outlets in 2004 with nearly 2.5 billion estimated listeners.^{56 57} Latin America possessed almost 500 Christian radio and television stations by 1980. In 1987, Latin America's most popular woman evangelist could be heard daily by 100 million people in 22 countries over these stations, prompting enormous mail response from listeners.⁵⁸ While difficult to demonstrate a causal connection, the growth of Christian broadcasting in the non-Western world after 1970 bore a close correlation with the large-scale expansion of the Christian church in the Southern hemisphere during the same period.

Missionary broadcasters have provided extensive anecdotal evidence that the expansion of worldwide Christian broadcasting produced wide-spread evangelical conversions, particularly after 1970. Several evangelical experts and scholars have agreed with the assessments of broadcasters that missionary stations had a large religious impact, even if that influence has been difficult to trace. Frances Gray, a missionary audience researcher, asserts that difficulty in measuring missionary radio should not preclude appreciation for its significant cultural effect:

“... the impact of radio for missions has been substantial. Though it may be impossible to quantify the long-term effects statistically in terms of conversions and baptisms that have resulted, it has become apparent to missions researchers that Christian radio and TV have been a major force in evangelism.”⁵⁹

In a private letter, Donald McGavran, a renowned evangelical missiologist and authority on world missions, attributed the major motivation behind the tremendous explosion of the Chinese house church movement in the 1970s to the activities of FEBC, the most significant evangelical agency broadcasting into Communist China beginning in 1949.⁶⁰

Leading scholars of religion have accorded importance to Christian broadcasting in explaining the worldwide revival of conservative Protestantism after 1970. Sociologist of religion David Martin, a world-renowned scholar of Pentecostalism and evangelicalism, associates the explosion of Protestantism in Latin America with a shift towards “modern means of communication.”⁶¹ Missiologist Roger Greenway maintains that electronic media evangelism in Latin America after WWII has had a sizable impact: “Looking back from the vantage point of the 1990s, it is impossible to explain the growth of Protestantism in Latin America without factoring in the creative and dynamic use of the electronic media by Protestant Evangelists.”⁶² Radio and television broadcasting, Greenway considers, “made a major impact in Latin America” and “shaped the form and content of almost all areas of Protestant life.”⁶³ Sociologist Jeffrey Hadden, a frequent critic of IRBs, maintains that broadcasting is partly responsible for the rapid growth of the church in South Korea, as well as the phenomenal growth of Pentecostalism in Brazil and Central America.⁶⁴

Assessing the historical impact of missionary radio, of course, raises a host of methodological and hermeneutical difficulties, which lie outside the domain of this dissertation. These include, briefly, measuring audience size, gauging the typicality of listener letter responses, quantifying Christian affiliation statistically, correlating the diffuse influence of radio with the traditional ecclesiastical boundaries of the church

within the nation-state, and adequately accounting for the role of indigenous leaders and movements (as opposed to Western broadcasters) in the dramatic growth of the church outside the West. Given the extent of these difficulties, as Jeffrey Hadden has argued, it may not be possible to measure the impact of missionary radio using criteria from the social sciences.⁶⁵ Instead, as Frances Gray suggests, researchers may have to rely on anecdotal and impressionistic data rather than hard statistics (such as the numbers of conversions and baptism) to assess the sizeable global footprint of missionary radio.⁶⁶

Assessing the impact of missionary radio is thus a difficult (perhaps impossible) pursuit. “Impact studies” comprise an elaborate intellectual and academic exercise, which require careful elaboration of evaluation criteria as well as considerable methodological sophistication to succeed. Within what intellectual frame of reference (historical, sociological, cultural, or anthropological) will the value of missionary radio be placed? What constitutes an adequate impact and whose standards should be used – broadcasters, listeners, or scholars? And how will impact be measured – using quantitative, statistical methods, literary evidence, ethnographic investigation, or some other analytical tool?

Based on a review of broadcaster archives, the dissertation suggests a fruitful way forward and a productive avenue for further research. An evaluation of the impact of missionary radio would benefit from a review of the extensive listener sources found in broadcaster archives. Using these sources with care, a dual analysis of missionary radio’s impact could be constructed, pairing the perception of missionary broadcasters’ own effectiveness (as reflected in their institutional audience research efforts and publicity) with a listener’s perspective, assembled painstakingly from the extensive conversion testimonies, “praise reports,” and letter excerpts in the possession of IRBs. Handling such

sources would, of course, require considerable interpretive skill and would entail exploring extensive theoretical scholarship on the topics of Americanization, cultural imperialism, and hegemony in order to judge how much missionary radio comprised a form of domination vs. empowerment for its local audiences. By providing an account of missionary radio reception from a broadcaster perspective, the current dissertation is intended as a first step toward addressing such questions and formulating a comprehensive historical evaluation of American international religious broadcasting that would encompass broadcaster and listener points of view and produce a macro-level assessment of the historical impact of missionary radio on a world scale

As suggested earlier, the significance of missionary radio for American broadcasters (its legitimization of conservative evangelical religion and rationalization of world evangelism) complemented its larger function for audiences overseas. To explain this connection and articulate the larger significance of missionary radio for world history, the dissertation garners insights from comments made by historian of fundamentalism Joel Carpenter in his introduction to Clarence Jones' *Radio, The New Missionary*.⁶⁷ Carpenter assumes the Southern shift of world Christianity during the latter twentieth century as his point of departure, and accords most of the credit for this historic shift to non-Western Christians who "made the Gospel their own and have taken it to their neighbors." As Carpenter suggests, an emphasis on the indigenous identity of world Christianity after 1970 (during its greatest revival) does not preclude an appreciation for the importance of American missionary radio during the period 1931-1970 covered in this dissertation. Conservative evangelical faith missions and service agencies, such as

SIM and HCJB, functioned as important purveyors of the gospel message in the first instance from its Western environment into a new non-Western setting.

This dissertation maintains that missionary radio prior to 1970 played a prominent role in the epochal growth of the Christianity in Asia, Africa, and Latin America during the closing three decades of the twentieth century, but in an unexpected way. By broadly legitimizing North American conservative evangelicalism in a new setting, missionary radio instituted a process of cultural transplanting that then permitted the indigenous growth which succeeded it. As such, this dissertation provides a critical prehistory for the subsequent rise of world Christianity based in the Southern hemisphere. Academe has not given due notice to the role of broadcasting in this epochal phenomenon. Unlike scholars, missionary broadcasters understood that radio, like the Almighty, performed its wonders in silent and mysterious ways, penetrating deep within cultures to carry out its function of legitimation. It is time now for scholars to tease out the historical traces of missionary radio's influence, as seen in the multitude of Abraham's seed around the world in a later generation.

¹ Abe Van Der Puy, untitled paper, 1964, File 378 ("Evangelism by Radio – Source Material"), HCJB Archives (HCJB), Colorado Springs, CO, 3.

² Edwin Kayea, "Programming – The Station's View," undated, Testimonies, Audience Survey, Liberia Box 24, SIM International Archives (SIM), Fort Mill, SC, 3.

³ Quentin Schultze, "The Mythos of the Electronic Church," *Critical Studies in Mass Communication*, 4 (1987), 245-261.

⁴ Anonymous, "HCJB's Gospel Good Neighbor Policy?," undated, unfiled, "History – Organization," HCJB.

⁵ Edwin Kayea, "Programming – The Station's View," undated, Testimonies, Audience Survey, Liberia Box 24, SIM, 9.

⁶ Anonymous, "Radio in Misions – 'On the Beam'," *The Radio Missionary Log*, Easter Number, Volume 1, No. 1, Easter 1944, HCJB, 3.

⁷ Clarence W. Jones, *Radio, The New Missionary* (Moody, 1946), 109

⁸ Letter from Art Zylstra to Abe C. VanDerPuy, August 22, 1964, File 378, HCJB.

⁹ Edwin Kayea, "Programming – The Station's View," undated, Testimonies, Audience Survey, Liberia Box 24, SIM, 3.

- ¹⁰ S. Rose and Quentin Schultze, "Evangelical Awakening in Guatemala: Fundamentalist Impact on Education and Media," in Martin Marty and Scott Appleby, eds., *Fundamentalisms and Society* (University of Chicago, 1993).
- ¹¹ Letter from Dave Jones to Abe C. Van Der Puy, July 21, 1964, File 378, HCJB.
- ¹² Abe Van Der Puy, untitled paper, 1964, File 378, HCJB, 4.
- ¹³ Anonymous, "Radio in Misions – 'On the Beam'," *The Radio Missionary Log*, Easter Number, Volume 1, No. 1, Easter 1944, HCJB, 3.
- ¹⁴ Clarence Jones, "World Survey of Missionary Radio," Report of the Third World Conference on Missionary Radio, June 12-15, 1961, Folder 16, Box 34, Collection 86 (International Christian Broadcasters), Billy Graham Center Archives (BGCA), Wheaton, IL.
- ¹⁵ Clarence W. Jones, *Radio, The New Missionary* (Moody, 1946), 47.
- ¹⁶ J.C. Percy in IFMA News, May, 1956, quoted in the Evangelical Press Service, Release 191, May 23, 1956, found in "New Sermon Material," RHB Files, Far East Broadcasting Company Archives (FEBC), La Mirada, CA.
- ¹⁷ Edwin Kayea, "Programming – The Station's View," undated, Testimonies, Audience Survey, Liberia Box 24, SIM, 10.
- ¹⁸ Anonymous, "Radio in Misions – 'On the Beam'," *The Radio Missionary Log*, Easter Number, Volume 1, No. 1, Easter 1944, HCJB, 3.
- ¹⁹ Clarence W. Jones, *Radio, The New Missionary* (Moody, 1946), 109.
- ²⁰ Abe Thiessen, "The Transistor in Missionary Radio," undated (ca. 1957?), Folder 17, Box 32, Collection 86, BGCA.
- ²¹ George Marsden, "Preachers of Paradox: Fundamentalist Politics in Historical Perspective" in *Understanding Fundamentalism and Evangelicalism* (Eerdmans, 1991).
- ²² Randolph Stakeman, *The Cultural Politics of Religious Change: A Study of the Sanoyea Kpelle in Liberia* (E. Mellen, 1986).
- ²³ "Testimony of Mr. Samuel Ephriam," Testimonies, Audience Survey, Liberia Box 24, SIM.
- ²⁴ Edwin Kayea, "Programming – The Station's View," undated, Testimonies, Audience Survey, Liberia Box 24, SIM, 5.
- ²⁵ Clarence W. Jones, *Radio, The New Missionary* (Moody, 1946), 103.
- ²⁶ Marshall McLuhan, *Understanding Media: The Extensions of Man* (McGraw-Hill, 1964).
- ²⁷ George Marsden, *Understanding Fundamentalism and Evangelicalism* (Eerdmans, 1991), 67.
- ²⁸ Joel Carpenter, *Revive Us Again: The Reawakening of American Fundamentalism* (Oxford University, 1997), 126.
- ²⁹ Clarence W. Jones, *Radio, The New Missionary* (Moody, 1946), 94-5.
- ³⁰ Kanzo Uchimura, *Japan Christian Intelligencer*, Vol. 1, 1926, cited in Andrew Walls, "The American Dimension of the Missionary Movement," in Andrew Walls, *The Missionary Movement in Christian History Studies in the Transmission of Faith* (Orbis, 1996), 221-222.
- ³¹ Anonymous, "Radio in Misions – 'On the Beam'," *The Radio Missionary Log*, Easter Number, Volume 1, No. 1, Easter 1944, HCJB, 3.
- ³² W. Stanley Rycroft, "The Gospel on the Air in Latin America," *The Radio Missionary Log*, Vol. 2, No. 4, June 1945, 11-12.
- ³³ The exact figure is 1.195 billion. Source: www.globalchristianity.org, November 1, 2004.
- ³⁴ Joel Carpenter, *Revive Us Again: The Reawakening of American Fundamentalism* (Oxford University, 1997), 233.
- ³⁵ Joel Carpenter, "Introduction" to *Missionary Innovation and Expansion* (Garland Publishing, 1988).
- ³⁶ Robert Wuthnow, *The Restructuring of American Religion: Society and Faith since World War II* (Princeton University, 1988), Chapter 6.
- ³⁷ Jones, *Radio, The New Missionary* (Moody, 1946), 108-9.
- ³⁸ Joel Carpenter, *Revive Us Again: The Reawakening of American Fundamentalism* (Oxford University, 1997), 126.
- ³⁹ Roland Robertson, "Globalization or glocalisation?," *Journal of International Culture* 1 (1994), 33-52; George Ritzer, *The Globalization of Nothing* (Pine Forge Press, 2001).
- ⁴⁰ Anonymous, "Radio in Misions – 'On the Beam'," *The Radio Missionary Log*, Easter Number, Volume 1, No. 1, Easter 1944, HCJB, 3.
- ⁴¹ Letter from Abe Thiessen to Derek Porter, December 8, 1958, Folder 39, Box 32, Collection 86, BGCA.

- ⁴² Hank Voss, letter to Abe Thiessen, October 28, 1957, Folder 26, Box 33, Collection 86, BGCA.
- ⁴³ Clarence W. Jones, "A Global Planning Project for Missionary Radio Stations," undated (ca. November 1945), Folder 165, Box 1, Collection 349 (Clarence Wesley Jones - Papers), BGCA.
- ⁴⁴ Paddy Scannell, *Radio, Television, and Modern Life: A Phenomenological Approach* (Blackwell, 1996) and Michel de Certeau, *The Practice of Everyday Life* (University of California, 1984).
- ⁴⁵ Thomas H. Guback and Steven P. Hill, *The Innovation of Broadcasting in the Soviet Union and the Role of V.I. Lenin* (Institute of Communication Research, University of Illinois, 1972); Julian Hale, *Radio Power: Propaganda and International Broadcasting* (Temple University, 1975); Donald K. Browne, *International Broadcasting: The Limits of the Limitless Medium* (Praeger, 1982); and Horst J.P. Bergmeier and Rainer E. Lotz, *Hitler's Airwaves: The Inside Story of Nazi Radio Broadcasting and Propaganda Swing* (Yale University, 1997), Chapter 1.
- ⁴⁶ "World Christian Missionary Resources," www.missionaryresources.com, September 16, 2004; Dan Wooding, "Canadian Missions Group Sees Some 371,000 'Portable Missionaries' Invade Some of the World's Most Remote Regions," ASSIST News Service, May 21, 2001, www.assistnews.net, September 16, 2004; "Fix-Tuned Radios," www.galcom.org, September 24, 2004.
- ⁴⁷ "TWR Mozambique's 'Capital Radio' to Receive Upgrade," www.twrafrica.org, September 16, 2004; personal communication from Brent Bartlet, TWR-Zimbabwe, September 22, 2004.
- ⁴⁸ By 1975, Ecuador's set penetration level of 107 radio receivers per 1,000 people (10%) marked it among the lowest in South America. Uruguay (507), neighboring Chile (450), Argentina (385), Brazil (306), and Guyana (367) possessed three to five times as many radios for their populations, while only Bolivia (96) and Paraguay (68) had less per capita radio sets than Ecuador. Source: Table A.3, Elihu Katz and George Wedell, *Broadcasting in the Third World: Promise and Performance* (Harvard University, 1977).
- ⁴⁹ Such a figure represented the third lowest total in South America (after Peru and Paraguay). Source: Table 9.1 "Radio Receivers: Total and Number per 1,000 People," UNESCO, *Statistical Yearbook 1998* (UNESCO Publishing and Bernan, 1998).
- ⁵⁰ Alvin M. Goffen, *The Rise of Protestant Evangelism in Ecuador, 1895-1990* (University Press of Florida, 1994), Appendix 1
- ⁵¹ David Stoll, cited in Alvin M. Goffen, *The Rise of Protestant Evangelism in Ecuador, 1895-1990* (University Press of Florida, 1994).
- ⁵² Sources: "Table A.4: Number of radio and television receivers in use in ninety-one countries, per 1,000 population" in Elihu Katz and George Wedell, *Broadcasting in the Third World: Promise and Performance* (Harvard University, 1977) and Table 9.1 "Radio Receivers: Total and Number per 1,000 People," UNESCO, *Statistical Yearbook 1998* (UNESCO Publishing and Bernan, 1998).
- ⁵³ Elizabeth Isichei, *A History of Christianity in Africa: from Antiquity to the Present* (Eerdmans, 1995)
- ⁵⁴ United States Information Agency, Office of Research and Intelligence, "World Wide Distribution of Radio Receiver Sets," December 31, 1957, Folder 5, Box 33, Collection 86, BGCA.
- ⁵⁵ David Held and Anthony McGrew, *Global Transformations: Politics, Economics, and Culture* (Stanford: Stanford University, 1999), 351.
- ⁵⁶ Source: Lamin Sanneh, "Pentecostalism," *Odyssey*, Chicago Public Radio, October 20, 2003. Also, David Barrett, ed., *World Christian Encyclopedia* (Oxford University, 1982).
- ⁵⁷ David B. Barrett, Todd M. Johnson, and Peter F. Crossing, "Status of Global Mission, 2005, in Context of 20th and 21st Centuries," *International Bulletin of Missionary Research*, Vol. 29, No. 1, January 2005, 29.
- ⁵⁸ K. Piecuch, "Miranda Heard by 100 Million," *Action*, November/December 1987, 15, cited in Roger S. Greenway, "Protestant Mission Activity in Latin America" in Daniel R. Miller, ed., *Coming of Age: Protestantism in Contemporary Latin America* (University Press of America, 1994), 192.
- ⁵⁹ Lausanne Committee for World Evangelization, Frances Gray, contr., *Radio in Mission: A Handbook on the Use of Radio in World Evangelization* (Lausanne Committee for World Evangelization, 1989), 7.
- ⁶⁰ Letter from Donald McGavran to Bob Bowman, October 28, 1983, Files of Robert H. Bowman, Box 5, FEBC.
- ⁶¹ David Martin, *Tongues of Fire: The Explosion of Protestantism in Latin America* (Basil Blackwell, 1990).
- ⁶² Roger S. Greenway, "Protestant Mission Activity in Latin America" in Daniel R. Miller, ed., *Coming of Age: Protestantism in Contemporary Latin America* (University Press of America, 1994), 192.

⁶³ Roger S. Greenway, "Protestant Mission Activity in Latin America" in Daniel R. Miller, ed., *Coming of Age: Protestantism in Contemporary Latin America* (University Press of America, 1994), 192-94.

⁶⁴ Jeffrey K. Hadden, "The Globalization of American Televangelism," in Roland Robertson and William R. Garrett, *Religion and Global Order* (Paragon House, 1991), 232.

⁶⁵ According to Hadden, "... just how much collective impact [IRBs] are having is unknown and probably unknowable by measures that would satisfy the criteria of social science inquiry." Jeffrey K. Hadden, "The Globalization of American Televangelism," in Roland Robertson and William R. Garrett, *Religion and Global Order* (Paragon House, 1991), 233.

⁶⁶ Lausanne Committee for World Evangelization, Frances Gray, contr., *Radio in Mission: A Handbook on the Use of Radio in World Evangelization* (Lausanne Committee for World Evangelization, 1989), 7.

⁶⁷ Joel Carpenter, "Introduction" to *Missionary Innovation and Expansion* (Garland Publishing, 1988).

REFERENCES

- Abelman, Robert, and Stewart Hoover, eds. *Religious Television: Controversies and Conclusions*. Norwood, NJ: Ablex, 1990.
- Abrams, Douglas Carl. *Selling the Old-time Religion: American Fundamentalists and Mass Culture, 1920-1940*. Athens: University of Georgia Press, 2001.
- Anderson, Benedict. *Imagined Communities: Reflections on the Origin and Spread of Nationalism*. London: Verso, 1983.
- Aitken, Hugh. *The Continuous Wave: Technology and American Radio, 1900-1932*. Princeton: Princeton University Press, 1985.
- . *Syntony and Spark: The Origins of Radio*. London: Wiley & Sons, 1976.
- Aikman, David. *Jesus in Beijing: How Christianity is Transforming China and Changing the Global Balance of Power*. Washington, D.C.: Regnery Publishing, 2003.
- Ammerman, Nancy T. *Bible Believers: Fundamentalists in the Modern World*. Rutgers: Rutgers University Press, 1987.
- . “North American Protestant Fundamentalism.” In *Fundamentalisms Observed*, edited by Martin E. Marty and R. Scott Appleby. Chicago: University of Chicago Press, 1991.
- Appadurai, Arjun. *Modernity at Large: Cultural Dimensions of Globalization*. Minneapolis, University of Minnesota, 1996.
- Armstrong, Ben. *The Electric Church*. Nashville: Thomas Nelson, 1979.
- Balmer, Randall. *Blessed Assurance: A History of Evangelicalism in America*. Boston: Beacon Press, 1999.
- . *Mine Eyes Have Seen the Glory: A Journey into the Evangelical Subculture in America*. New York: Oxford University Press, 2000.
- Balmer, Randall and Lauren F. Winner. *Protestantism in America*. New York: Columbia University Press, 2002.
- Barnouw, Erik. *The Golden Web, 1933-1953*. Vol. 2 of *A History of Broadcasting in the United States*. New York: Oxford University Press, 1968.

- Barrett, David, B. *World Christian Encyclopedia: A Comparative Study of Churches and Religions in the Modern World, AD 1900-2000*. New York: Oxford University Press, 1982.
- Barrett, David, B., George Thomas Kurian, and Todd M. Johnson. *World Christian Encyclopedia: A Comparative Study of Churches and Religions in the Modern World*. New York: Oxford University Press, 2001.
- Batson, Lawrence D. "The Extent of the Development of Radio Over the World." *The Annals of the American Academy of Political and Social Sciences* 142 (1929): Supplement, 21-31.
- Batson, Lawrence D., comp. *Radio Markets of the World, 1932*. U.S. Department of Commerce. Washington, D.C.: GPO, 1932.
- Beaver, R. Pierce. "The Protestant Foreign Missionary Enterprise of the United States." *Missionary Research Library Occasional Bulletin* 4, no. 7 (1953): 1-15.
- Bebbington, David W., Mark A. Noll, and George A. Rawlyk. *Evangelicalism: Comparative Studies of Popular Protestantism in North America, the British Isles, and Beyond, 1700 -1990*. New York: Oxford University Press, 1994.
- Bediako, Kwame. *Christianity in Africa: The Renewal of a Non-Western Religion*. Maryknoll, NY: Orbis, 1995.
- Belmonte, Laura. "Defending A Way of Life: American Propaganda and the Cold War, 1945-1959." Ph.D. diss., University of Virginia, 1996.
- Bendroth, Margaret Lamberts. "Fundamentalism and the Media, 1930-1990." In *Religion and the Mass Media: Audiences and Adaptations*, edited by Daniel A. Stout and Judith M. Buddenbaum. Thousand Oaks, CA: Sage, 1996.
- . "Why Women Loved Billy Sunday: Urban Revivalism and Popular Entertainment in Early Twentieth-Century American Culture." *Religion and American Culture* 14 (2004): 251-71.
- Beniger, James. *The Control Revolution: Technological and Economic Origins of the Information Society*. Cambridge: Harvard University Press, 1986.
- Berg, Jerome S. *On the Short Waves, 1923-1945: Broadcast Listening in the Pioneer Days of Radio*. Jefferson, NC: McFarland, 1999.
- Berger, Peter, ed. *The Desecularization of the World: Resurgent Religion and World Politics*. Washington, D.C.: Ethics and Public Policy Center and Grand Rapids: W.B. Eerdmans, 1999.

- Berman, Marshall. *All that is Solid Melts Into Air: The Experience of Modernity*. New York: Viking Penguin, 1982.
- Bijker, Wiebe, Thomas P. Hughes, and Trevor Pinch, eds. *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology*. Cambridge: MIT Press, 1987.
- Boczkowski, Pablo J. "Mutual Shaping of Users and Technologies in a National Virtual Community." *Journal of Communication* (Spring 1999): 86-108.
- Bourdieu, Pierre. *Distinction: A Social Critique of the Judgment of Taste*. Cambridge: Harvard University Press, 1984.
- Bourgault, Louise M. *Mass Media in Sub-Saharan Africa*. Bloomington, IN: Indiana University Press, 1995.
- Bowman, Eleanor G. *Eyes Beyond the Horizon*. Nashville: Thomas Nelson, 1991.
- Brimmer, Vicki and Fred Wulff. *A Technical History of the VOA Network*. Voice of America, Office of Engineering: 1995. Photocopy.
- Browne, Donald K. *International Broadcasting: The Limits of the Limitless Medium*. New York: Praeger, 1982.
- . Browne, Donald K. "International Commercial Radio Broadcasting: Nation Shall Speak Profit Unto Nation." *Journal of Broadcasting & Electronic Media* 30 (1986): 195-212.
- Brouwer, Steve, Paul Gifford, and Susan Rose. *Exporting the American Gospel: Global Christian Fundamentalism*. New York: Routledge, 1996.
- Buchanan, Osborne Blunden, "A study of the pioneer missionary radio station, HCJB." Master's thesis, Kennedy School of Missions (Hartford Seminary Foundation), 1962.
- Buhlmann, Walbert. *The Coming of the Third Church: An Analysis of the Present and Future of the Church*. Maryknoll, NY: Orbis, 1976.
- Carey, James. *Communication as Culture: Essays on Media and Society*. New York: Routledge, 1989.
- Carlat, Louis. "'A Cleanser for the Mind': Marketing Radio Receivers for the American Home, 1922-1932." In *His and Hers: Gender, Consumption and Technology*, edited by Roger Horowitz and Arwen Mohun. Charlottesville: University of Virginia Press, 1998.

- Carpenter, Joel A. "Fundamentalist Institutions and the Rise of Evangelical Protestantism, 1929-1942." *Church History* 49 (1980): 62-75.
- . "Propagating the Faith Once Delivered: The Fundamentalist Missionary Enterprise, 1920-1945." In *Earthen Vessels: American Evangelicals and Foreign Missions, 1880-1980*, edited by Joel A. Carpenter and Wilbert R. Shenk. Grand Rapids: W.B. Eerdmans, 1990.
- . *Revive Us Again: The Reawakening of American Fundamentalism*. New York: Oxford University Press, 1997.
- Carpenter, Joel A. and Wilbert R. Shenk, eds. *Earthen Vessels: American Evangelicals and Foreign Missions, 1880-1980*. Grand Rapids: W.B. Eerdmans, 1990.
- Carpenter, Joel A. and Lamin Sanneh, eds. *The Changing Face of Christianity: Africa, the West, and the World*. New York: Oxford University Press, 2005.
- Castells, Manuel. *The Rise of the Network Society*. Vol. 1 of *The Information Age: Economy, Society, and Culture*. Malden, MA: Blackwell Publishers, 1996.
- . *The Power of Identity*. Vol. 2 of *The Information Age: Economy, Society, and Culture*. Malden, MA: Blackwell Publishers, 1997.
- De Certeau, Michel. *The Practice of Everyday Life*. Berkeley: University of California, 1984.
- Christianity Today Institute, Andres Tapia, contr. "Why is Latin America Turning Protestant?" *Christianity Today* 6 April 1992: 28-29.
- Clayton, David. "The Consumption of Radio Broadcasting Technology in Hong Kong, 1930-1960." *Economic History Review*, 57 (2004): 691-726.
- Cohen, Lizabeth. *Making a New Deal: Industrial Workers in Chicago, 1919-1939*. Cambridge: Cambridge University Press, 1991.
- Cohen, Norman J., ed. *The Fundamentalist Phenomenon: A View from Within; A Response from Without*. Grand Rapids: W.B. Eerdmans, 1990.
- Cook, Frank. *Seeds in the Wind: The Story of the Voice of the Andes, Radio Station HCJB, Quito, Ecuador*. Miami: World Radio Missionary Fellowship, 1976.
- Coote, Robert T. "The Uneven Growth of Conservative Evangelical Missions." *International Bulletin of Missionary Research* 6 (1982): 118-23.
- Cox, Harvey. *Fire from Heaven: The Rise of Pentecostal Spirituality and the Reshaping of Religion in the Twenty-First Century*. Reading, MA: Addison-Wesley, 1995.

- . “Christianity.” In *Global Religions*, edited by Mark Juergensmeyer. New York: Oxford University Press, 2003.
- Craig, Steve. “How America Adopted Radio: Demographic Differences in Set Ownership Reported in the 1930-1950 U.S. Censuses.” *Journal of Broadcasting & Electronic Media* (June 2004): 179-95.
- Dayton, Donald W. and Robert K. Johnston, eds. *The Variety of American Evangelicalism*. Knoxville: University of Tennessee, 1991.
- Douglas, Susan. *Inventing American Broadcasting, 1899-1922*. Baltimore: Johns Hopkins, 1987.
- Douglas, Susan. “Amateur Operators and American Broadcasting: Shaping the Future of Radio.” In *Major Problems in the History of American Technology: Documents and Essays*, edited by Gregory Clancey and Merritt Roe Smith. Boston: Houghton-Mifflin, 1998.
- Durkheim, Emile. *The Elementary Forms of the Religious Life*. New York: Free Press, 1965.
- Emery, Walter B. *National and International Systems of Broadcasting: Their History, Operation, and Control*. East Lansing: Michigan State University, 1969.
- Edgerton, David. “From Innovation to Use: Ten Eclectic Theses.” *History and Technology* 16 (1999): 111-36.
- Ellens, J. Harold. *Models of Religious Broadcasting*. Grand Rapids: W.B. Eerdmans, 1974.
- Erickson, Hal. *Religious Radio and Television in the United States, 1921-1991: The Programs and Personalities*. Jefferson, NC: McFarland, 1992.
- Eskridge, Larry K. “Evangelical Broadcasting: Its Meaning for Evangelicals.” In *Transforming Faith: The Sacred and Secular in Modern American History*, edited by M.L. Bradbury and James B. Gilbert. New York: Greenwood Press, 1989.
- Fejes, Fred. “The U.S. in Third World Communications: Latin America, 1900-1945.” *Journalism Monograph* 86 (February 1983).
- . *Imperialism, Media, and the Good Neighbor: New Deal Foreign Policy and Shortwave Broadcasting to Latin America*. Norwood, NJ: Ablex, 1986.
- Fischer, Claude. *America Calling: A Social History of the Telephone to 1940*. Berkeley: University of California Press, 1990.

- Fishwick, Marshall and Ray Browne, eds. *The God Pumpers: Religion in the Electronic Age*. Bowling Green: Bowling Green State University Press, 1987.
- Fore, William. *Television and Religion: The Shaping of Faith, Values, and Culture*. Minneapolis: Augsburg, 1987.
- Fortner, Robert. "Saving the World? American Evangelicals and Transnational Broadcasting." In *American Evangelicals and the Mass Media*, edited by Quentin Schultze. Grand Rapids: W.B. Eerdmans, 1990.
- . *International Communication: History, Conflict, and Control of the Global Metropolis*. Belmont, CA: Wadsworth, 1993.
- Fortner, Robert S. and Dona S. Durham. *A Worldwide Radio Receiver Population Analysis*. Washington, D.C: Academy for Educational Development (USIA Contract No. IA-22188-23), May 15, 1986.
- Fraenkel, Peter. *Wayaleshi Radio in Central Africa*. London: Weidenfeld and Nicolson, 1959.
- Freed, Paul. *Towers to Eternity: The Inspiring Story of Trans World Radio*. Waco, TX: Word Books, 1968.
- . *Let the Earth Hear*. Nashville: Thomas Nelson, 1980.
- Garay, Ronald. "WRNO Worldwide: A Case Study in Licensing Private US International Broadcast Stations." *Journal of Broadcasting* 26 (1982): 641-55.
- Garrett, William R. and Roland Robertson. *Religion and Global Order*. New York: Paragon House, 1991.
- Giddens, Anthony. *The Consequences of Modernity*. Stanford: Stanford University Press, 1990.
- . *Runaway World: How Globalization is Reshaping Our World*. London: Routledge, 2000.
- Goffin, Alvin M. *The Rise of Protestant Evangelism in Ecuador, 1895-1990*. Gainesville: University Press of Florida, 1994.
- Goodpasture, H. McKennie. *Cross and Sword: An Eyewitness History of Christianity in Latin America*. Maryknoll, NY: Orbis, 1989.
- Green, S.J.D. "The Medium and the Message: Televangelism in America." *American Quarterly* 44 (March 1992): 136-45.

- Greenway, Roger S. "Protestant Mission Activity in Latin America." In *Coming of Age: Protestantism in Contemporary Latin America*, edited by Daniel R. Miller. Lanham, MD: University Press of America, 1994.
- Hackett, Rosalind. "Charismatic/Pentecostal Appropriations of Media Technologies in Nigeria and Ghana." *Journal of Religion in Africa* 24 (1998).
- Hadden, Jeffrey. "Religious Broadcasting and the Mobilization of the New Christian Right." *Journal for the Scientific Study of Religion* 26 (1987): 1-24.
- . "The Globalization of American Televangelism." In *Religion and Global Order*, edited by Roland Robertson and William R. Garrett. New York: Paragon House, 1991.
- Hadden, Jeffrey and Anson Shupe. *Televangelism, Power, and Politics or God's Frontier*. New York: H. Holt, 1988.
- Hadden, Jeffrey and Charles Swann. *Prime-Time Preachers: The Rising Power of Televangelism*. Reading, MA: Addison-Wesley, 1981.
- Hale, Julian. *Radio Power: Propaganda and International Broadcasting*. Philadelphia: Temple University Press, 1975.
- Hangen, Tona. *Redeeming the Dial: Radio, Religion, and Popular Culture in American Popular Culture in America*. Chapel Hill: University of North Carolina Press, 2002.
- . "Man of the Hour: Walter A. Maier and Religion by Radio on *The Lutheran Hour*." In *Radio Reader: Essays in the Cultural History of Radio*, edited by M. Hilmes. New York: Routledge, 2002.
- Harding, Susan. *The Book of Jerry Falwell: Fundamentalist Language and Politics*. Princeton: Princeton University Press, 2000.
- Haring, Kristen. "The 'Freer Men' of Ham Radio: How a Technical Hobby Provided Social and Spatial Distance." *Technology and Culture* 44 (2003): 734-761.
- Harrison, Arthur P., Jr. "Single-Control Tuning: An Analysis of an Innovation." *Technology and Culture* 20 (1979): 296-321.
- Hart, D.G. *The Lost Soul of American Protestantism*. Lanham, MD: Rowman and Littlefield, 2002.
- . *That Old-Time Religion in Modern America: Evangelical Protestantism in Modern America*. Chicago: Ivan Dee, 2002.

- Harvey, David. *The Condition of Postmodernity: An Enquiry into the Origins of Cultural Change*. Oxford and Cambridge, MA: Blackwell, 1989.
- Hastings, Adrian. *The Church in Africa, 1450-1950*. New York: Oxford University Press, 1994.
- Hatch, Nathan O. *The Democratization of American Christianity*. New Haven: Yale University Press, 1989.
- Head, Sydney. *Broadcasting in Africa: A Continental Survey of Radio and Television*. Philadelphia: Temple University Press, 1974.
- . *World Broadcasting Systems: A Comparative Analysis*. Belmont, CA: Wadsworth, 1985.
- Headrick, Daniel. *The Invisible Weapon: Telecommunications and International Politics, 1851-1945*. New York: Oxford University Press, 1991.
- . "Shortwave Radio and Its Impact on International telecommunications between the Wars." *History and Technology* 11(1994): 21-32.
- Held, David, et al. *Global Transformations: Politics, Economics, and Culture*. Stanford: Stanford University Press, 1999.
- Hedgehog Review. "Religion and Globalization." *The Hedgehog Review* 4 (Summer 2002).
- Hill, George. *Airwaves to the Soul: The Influence and Growth of Religious Broadcasting in America*. Saratoga, CA: R&E Publishers, 1983.
- Hilmes, Michele. *Radio Voices: American Broadcasting, 1922-1952*. Minneapolis: University of Minnesota, 1997.
- Hilmes, Michele and Jason Loviglio, eds. *Radio Reader: Essays in the Cultural History of Radio*. New York: Routledge, 2002.
- Hixson, Walter L. *Parting the Curtain: Propaganda, Culture, and the Cold War, 1945-1961*. New York: St. Martin's, 1997.
- Hong, Sungkook. *Wireless: From Marconi's Black Box to the Audion*. Cambridge: MIT Press, 2001.
- Hoover, Stewart. *Mass Media Religion: The Social Sources of the Electronic Church*. Newbury Park, CA: Sage, 1988.
- Hoover, Stewart M. and Douglas K. Warner. "History and Policy in American Broadcast Treatment of Religion." *Media Culture and Society* 19 (1997): 7-27.

- Hopkins, Dwight W., et al., eds. *Religions/Globalizations: Theories and Cases*. Durham: Duke University, 2001.
- Horsfield, Peter. *Religious Television: The American Experience*. New York: Longman, 1984.
- Horten, Gerd. *Radio Goes to War: The Cultural Politics of Propaganda During World War II*. Berkeley: University of California, 2002.
- Howes, Graham. "'God Damn Yanquis' – American Hegemony and Contemporary Latin American Christianity." In *World Order and Religion*, edited by Wade Clark Roof. Albany: State University of New York, 1991.
- Hunter, James Davison and Joshua Yates. "In the Vanguard of Globalization: The World of American Globalizers." In *Many Globalizations: Cultural Diversity in the Contemporary World*, edited by Peter L. Berger and Samuel P. Huntington. New York: Oxford University Press, 2002.
- Hudson, Winthrop S. *American Protestantism*. Chicago: University of Chicago Press, 1961.
- Hughes, Thomas. *American Genesis: A Century of Invention and Technological Enthusiasm*. New York: Viking, 1987.
- Hunter, James Davison. *American Evangelicalism: Conservative Religion and the Quandary of Modernity*. Rutgers: Rutgers University Press, 1983.
- Hutchison, William R. *Errand to the World: American Protestant Thought and Foreign Missions*. Chicago: University of Chicago Press, 1987.
- Hvalkof, Soren and Peter Aaby. *Is God An American: An Anthropological Perspective on the Missionary Work of the Summer Institute of Linguistics*. London: Survival International, 1981.
- Isichei, Elizabeth. *A History of Christianity in Africa: from Antiquity to the Present*. Grand Rapids: W.B. Eerdmans, 1995.
- Jenkins, Philip. *The Next Christendom: The Coming of Global Christianity*. New York: Oxford University Press, 2002.
- Johnson, Todd M. and Sandra S. Kim. "Describing the Worldwide Christian Phenomenon." *International Bulletin of Missionary Research* 29 (2005): 80-84.
- Jones, Clarence W. *Radio, the New Missionary*. Chicago: Moody Press, 1946.

- Kane, J. Herbert. *A Concise History of Christian World Mission: A Panoramic View from Pentecost to the Present*. Grand Rapids: Baker Book House, 1982.
- Katz, Elihu and George Wedell. *Broadcasting in the Third World: Promise and Performance*. Cambridge: Harvard University Press, 1977.
- Kern, Stephen. *The Culture of Time and Space, 1880-1918*. Cambridge: Harvard University Press, 1983.
- Kline, Ronald. *Consumers in the Country: Technology and Social Change in Rural America*. Baltimore: Johns Hopkins, 2000.
- Kline, Ronald and Trevor Pinch. "Users as Agents of Change: The Social Construction of the Automobile in the Rural United States." *Technology and Culture* 37 (1996): 763-795.
- Krige, John and Dominique Pestre, eds. *Companion to Science in the Twentieth Century*. London: Routledge, 2003.
- Krugler, David. *The Voice of America and the Domestic Propaganda Battles, 1945-1953*. Columbia, MO: University of Missouri Press, 2000.
- Larson, Cedric. "Religious Freedom as a Theme of the Voice of America." *Journalism Quarterly* 29 (1952): 187-93.
- Latour, Bruno. *We Have Never Been Modern*. Cambridge: Harvard University Press, 1993.
- Lausanne Committee for World Evangelization, Frances Gray, contr. *Radio in Mission: A Handbook on the Use of Radio in World Evangelization*. Charlotte, NC: Lausanne Committee for World Evangelization, 1989.
- Lewis, Donald M., ed. *Christianity Reborn: The Global Expansion of Evangelicalism in the Twentieth Century*. Grand Rapids: W.B. Eerdmans, 2004.
- Linderman, Alf. "Religious Television in Sweden: Toward a More Balanced View of Its Reception." In *Practicing Religion in the Age of the Media: Explorations in Religion, Media, and Culture*, edited by Stewart Hoover and Lynn Schofield Clark. New York: Columbia University Press, 2002.
- Lindqvist, Svante. "Changes in the Technological Landscape: The Temporal Dimension in the Growth and Decline of Large Technological Systems." In *Economics of Technology*, edited by Ove Granstrand. Amsterdam and New York: North-Holland, 1994.
- Loudot, Jacques. *L'Aventure Radio Monte Carlo, ou un demi-siecle d'affaires d'etat(s)*. Paris: Dreamland editeur, 2002.

- Luben, Barnerd M. "The Development of Missionary Radio." *The Christian Broadcaster* 13 (July 1966): 10-14.
- Lundby, Knut. "Between American Televangelism and African Anglicanism." In *Practicing Religion in the Age of the Media: Explorations in Religion, Media, and Culture*, edited by Stewart Hoover and Lynn Schofield Clark. New York: Columbia University Press, 2002.
- Lundgren, Manfred. *Proclaiming Christ to His World: The Experience of the Radio Voice of the Gospel, 1957-1977*. Geneva: Lutheran World Federation, ca. 1983.
- Maclin, A.N. "The Listening Continent: A Survey of Broadcasting in Africa." *The Christian Broadcaster: Journal of the World Association of Christian Broadcasters*. 11 (December 1964): 9-12.
- Marini, Stephen. "Hymnody as History: Early Evangelical Hymns and the Recovery of American Popular Religion." *Church History* 71 (2002): 273-305.
- Marriage, Sophia and Jolyon Mitchell. *Mediating Religion: Conversations in Media, Religion and Culture*. London and New York: T&T Clark, 2003.
- Marsden, George. *Fundamentalism and American Culture: The Shaping of Twentieth-Century Evangelicalism*. New York: Oxford University Press, 1980.
- . *Reforming Fundamentalism: Fuller Seminary and the New Evangelicalism*. Grand Rapids: W.B. Eerdmans, 1987.
- . *Understanding Fundamentalism and Evangelicalism*. Grand Rapids: W.B. Eerdmans, 1991.
- Marsden, George, ed. *Evangelicalism in Modern America*. Grand Rapids: W.B. Eerdmans, 1984.
- Martin, David. *Tongues of Fire: The Explosion of Protestantism in Latin America*. Oxford and Cambridge, MA: Basil Blackwell, 1990.
- . "The Evangelical Upsurge and Its Policy Implications." In *The Desecularization of the World: Resurgent Religion and World Politics*, edited by Peter Berger. Washington, D.C.: Ethics and Public Policy Center and Grand Rapids: W.B. Eerdmans, 1999.
- . *Pentecostalism: The World Their Parish*. Oxford and Cambridge, MA: Basil Blackwell, 2001.
- Martin, William. *A Prophet with Honor: The Billy Graham Story*. New York: William Morrow, 1991.

- Martin, Michèle. *Hello Central? Gender, Technology, and Culture in the Formation of Telephone Systems*. Montreal and Buffalo: McGill – Queen's University Press, 1991.
- Marty, Martin. *Religion and Republic: The American Circumstance*. Boston: Beacon Press, 1987.
- Marty, Martin E. and Scott R. Appleby, eds. *Fundamentalisms Observed*. Chicago: University of Chicago Press, 1991.
- Mattelart, Armand. *Mapping World Communication: War, Progress, Culture*. Minneapolis: University of Minnesota Press, 1994.
- . *The Invention of Communication*. Minneapolis: University of Minnesota Press, 1996.
- . *Networking the World, 1794-2000*. Minneapolis: University of Minnesota Press, 2000.
- McLoughlin, William G., Jr. *Modern Revivalism: Charles Grandison Finney to Billy Graham*. Chicago: University of Chicago Press, 1980.
- McLuhan, Marshall. *Understanding Media: The Extensions of Man*. New York: McGraw-Hill, 1964.
- Mitchell, Jolyon. *Visually Speaking: Radio and the Renaissance of Preaching*. Louisville, KY: Westminster John Knox, 1999.
- Moore, R. Laurence. "American Religion as Cultural Imperialism." In *The American Century in Europe*, edited by R. Laurence Moore and Maurizio Vaudagna. Ithaca: Cornell University, 2003.
- Moore, S. E., T. Warham, and P.I. Ritchie. "The Development of HCJB World Radio from 1931 to 1995." *100 Years of Radio*, September 5-7, 1995. Conference Publication 411, Institute of Electrical Engineers, 1995.
- Mytton, Graham. *Mass Communication in Africa*. London: Edward Arnold, 1983.
- , ed. *Global Audiences: Research for Worldwide Broadcasting 1993*. London: John Libbey, 1993.
- Neely, Lois. *Come Up to This Mountain: The Miracle of Clarence W. Jones & HCJB World Radio*. Wheaton, IL: Tyndale House Publishers, 1980.
- Nelson, Dean. *Small, Medium, and Large Impact: The Miracle of World Mission Radio*. Kansas City: Nazarene Pub. House, 1993.

- Noll, Mark A. *The Old Religion in the New World: The History of North American Christianity*. Grand Rapids: W.B. Eerdmans, 2002.
- . *The Rise of Evangelicalism: The Age of Edwards, Whitefield, and the Wesleys*. Vol. 1. of *A History of Evangelicalism: People, Movements and Ideas in the English-Speaking World*. Downers Grove, IL: InterVarsity Press, 2003.
- Noble, David. *The Religion of Technology: The Divinity of Man and the Spirit of Invention*. New York: Alfred A. Knopf, 1997.
- Nyborg, Geir. "Conquest, Dominance, or Spiritual Reformation? Bolivian Quechua Families Watching U.S. Televangelism." Ph.D. Diss., University of Bergen (Norway), 1995.
- Ong, Walter. *Orality & Literacy: The Technologizing of the Word*. London and New York: Routledge, 1982.
- Ourdshoorn, Nelly and Trevor Pinch, eds. *How Users Matter: The Co-Construction of Users and Technology*. Cambridge: MIT Press, 2003.
- Page, Leslie J., Jr. "The Nature of the Broadcast Receiver and Its Market in the United States from 1922 to 1927." *Journal of Broadcasting* 4 (1980): 174-82.
- Partner, Simon. *Assembled in Japan: Electrical Goods and The Making of the Japanese Consumer*. Berkeley: University of California Press, 1999.
- Peck, Janice. *The Gods of Televangelism*. Cresskill, NJ: Hampton Press, 1993.
- Phipps, Steven P. "The Commercial Development of Short Wave Radio in the United States, 1920-1926." *Historical Journal of Film, Radio, & Television* 11 (1991): 215-28.
- Piers, M. Larson. "Capacities and Modes of Thinking: Intellectual Engagements and Subaltern Hegemony in the Early History of Malagasy Christianity." *American Historical Review* 102 (1997): 969-1002.
- Pirsein, Robert W. *The Voice of America: A History of the International Broadcasting Activities of the United States Government, 1940-1961*. New York: Arno Press, 1979.
- Poster, Mark. *The Mode of Information: Poststructuralism and Social Context*. Chicago: University of Chicago Press, 1990.
- Postman, Neil. *Amusing Ourselves to Death: Public Discourse in the Age of Show Business*. New York: Viking Penguin, 1985.
- Radway, Janice. *Reading the Romance: Women, Patriarchy, and Popular Literature*.

Chapel Hill: University of North Carolina Press, 1987.

Reed, Jane. *A Voice Under Every Palm: The Story of the Radio Station ELWA*. Grand Rapids: Zondervan, 1968.

Riordan, Michael and Lillian Hoddeson. *Crystal Fire: The Invention of the Transistor and the Birth of the Information Age*. New York: Norton, 1997.

Ritzer, George. *The Globalization of Nothing*. Thousand Oaks, CA: Pine Forge Press, 2004.

Robert, Dana. "Shifting Southward: Global Christianity Since 1945." *International Bulletin of Missionary Research* 24 (2000): 50-58.

Rose, Susan and Quentin J. Schultze. "Evangelical Awakening in Guatemala: Fundamentalist Impact on Education and Media." In *Fundamentalisms and Society*, edited by Martin Marty and R. Scott Appleby. Chicago: University of Chicago Press, 1993.

Rosen, P. "The Development of the Domestic Radio Receiver." *100 Years of Radio*, September 5-7, 1995, Conference Publication 411, Institute of Electrical Engineers, 1995.

Sanneh, Lamin. *Translating the Message: The Missionary Impact on Culture*. Maryknoll, NY: Orbis, 1989.

———. *Encountering the West: Christianity and the Global Cultural Process – The African Dimension*. Maryknoll, NY: Orbis, 1993.

———. *Whose Religion is Christianity? The Gospel Beyond the West*. Grand Rapids: W.B. Eerdmans, 2003.

Scannell, Paddy. *Radio, Television, and Modern Life: A Phenomenological Approach*. London: Blackwell, 1996.

Schiffer, Michael Brian. *The Portable Radio in American Life*. Tucson: University of Arizona, 1991.

———. "Cultural Imperatives and Product Development: The Case of the Shirt-Pocket Radio." *Technology and Culture* 34 (1993): 98-113.

———. "Pathways to the Present: In Search of Shirt-Pocket Radios with Subminiature Tubes." In *Learning from Things: Method and Theory of Material Culture Studies*, edited by David Kingery. Washington, D.C.: Smithsonian Institution Press, 1996.

- Schivelbusch, Wolfgang. *The Railway Journey: the Industrialization of Time and Space in the Nineteenth Century*. Berkeley: University of California Press, 1986.
- Schultze, Quentin J. "The Mythos of the Electronic Church." *Critical Studies in Mass Communication* 4(1987): 245-61.
- . "Evangelical Radio and the Rise of the Electronic Church, 1921-1948." *Journal of Broadcasting & Electronic Media* 32 (1988): 289-303.
- , ed. *American Evangelicals and the Mass Media*. Grand Rapids: W.B. Eerdmans, 1990.
- . *Televangelism and American Culture: The Business of American Religion*. Grand Rapids: Baker Book House, 1991.
- . "Evangelicals' Uneasy Alliance with the Media." In *Religion and the Mass Media: Audiences and Adaptations*, edited by Daniel A. Stout and Judith M. Buddenbaum. Thousand Oaks, CA: Sage, 1996.
- . *Christianity and the Mass Media in America: Toward a Democratic Accommodation*. East Lansing: Michigan State University Press, 2003.
- Schwoch, James. *The American Radio Industry and its Latin American Activities, 1900-1939*. Urbana: University of Illinois Press, 1990.
- Shenk, Wilbert R. *Changing Frontiers of Mission*. Maryknoll, NY: Orbis, 1999.
- Shulman, Holly. *The Voice of America: Propaganda and Democracy*. Madison: University of Wisconsin Press, 1990.
- Siedel, Barry. *Gospel Radio*. Lincoln, NB: Back to the Bible Broadcast, 1971.
- Siewert, John A. and Dotsey Welliver, eds. *Mission Handbook: U.S. and Canadian Ministries Overseas, 2001-2003*. Wheaton, IL: Evangelism and Missions Information Center, 2000.
- Smith, Timothy. "The Evangelical Kaleidoscope and the Call to Christian Unity." *Christian Scholar's Review* 15 (1986): 125-40.
- Smulyan, Susan. *Selling Radio: The Commercialization of American Broadcasting, 1920 -1934*. Washington, D.C.: Smithsonian Institution Press, 1994.
- Squier, Susan Merrill, ed. *Communities of the Air: Radio Century, Radio Culture*. Durham: Duke University Press, 2003.

- Staudenmaier, John. *Technology's Storytellers: Reweaving the Human Fabric*. Cambridge: MIT Press, 1985.
- Stoll, David. "A Protestant Reformation in Latin America?" *The Christian Century* 107 (2): 44-48.
- . *Is Latin America Turning Protestant? The Politics of Evangelical Growth*. Berkeley: University of California Press, 1990.
- Stoll, David and Virginia Garrard-Burnett. *Rethinking Protestantism in Latin America*. Philadelphia: Temple University Press, 1993.
- Stout, Daniel A. and Judith M. Buddenbaum, eds. *Religion and the Mass Media: Audiences and Adaptations*. Thousand Oaks, CA: Sage, 1996.
- Stout, Harry. "Religion, Communication, and the Ideological Origins of the American Revolution." *William and Mary Quarterly* 34 (1977): 519-41.
- Sundkler, Bengt and Christopher Steed. *A History of the Church in Africa*. Cambridge: Cambridge University Press, 2000.
- Sussman, Gerald and John A. Lent, eds. *Transnational Communications: Wiring the Third World*. Newbury Park, CA: Sage, 1991.
- Sweet, Leonard, ed. *Communication and Change in American Religious History*. Grand Rapids: W.B. Eerdmans, 1993.
- . *The Evangelical Tradition in America*. Macon, GA: Mercer University, 1984.
- Takahashi, Yuzo. "A Network of Tinkerers: The Advent of the Radio and Television Receiver Industry in Japan." *Technology and Culture* 41 (2001): 460-484.
- Thrower, K.P. "History of Tuning." *100 Years of Radio*, September 5-7, 1995, Conference Publication 411, Institute of Electrical Engineers, 1995.
- Tudesq, A.-J. *La Radio en Afrique Noire*. Paris: Editions A. Pedone, 1983.
- Ugboajah, Frank Okwu, ed. *Mass Communication, Culture and Society in West Africa*. Munich and New York: Hans Zell Publishers for the World Association of Christian Communication, 1985.
- Volek, Thomas W. *Examining Radio Receiver Technology through Magazine Advertising in the 1920s and 1930s*. Ph.D. Diss., University of Minnesota, 1990.
- de Vries, Hent. "In Media Res: Global Religion, Public Spheres, and the Task of Contemporary Comparative Religious Studies." In *Religion and Media*, edited by Hent de Vries and Samuel Weber. Stanford: Stanford University Press, 2000.

- Walls, Andrew. *The Missionary Movement in Christian History Studies in the Transmission of Faith*. Maryknoll, NY: Orbis, 1996.
- . *The Cross-Cultural Process in Christian History: Studies in the Transmission and Appropriation of Faith*. Maryknoll, NY: Orbis, 2002.
- Ward, Mark, Sr. *Air of Salvation: The Story of Christian Broadcasting*. Grand Rapids: Baker Book House, 1994.
- Wasburn, Philo. *Broadcasting Propaganda: International Radio Broadcasting and the Construction of Political Reality*. Westport, CT: Praeger, 1992.
- Wedell, George, ed. *Making Broadcasting Useful: The African Experience*. Manchester: Manchester University Press, 1986.
- Whitehead, Briar. *God Speaks from a Little Box: Extraordinary Stories of Christ's Transforming Power*. MARC, 1989. Also published as *Unhindered Power: 40 True Stories of God at Work Through Christian Radio*. Chicago: Moody Press, 1990.
- Williams, Raymond. *Television, Technology, and Cultural Form*. New York: Schocken 1975.
- Williams, Rosalind. "Nature Out of Control: Cultural Origins and Environmental Implications of Large Technological Systems." In *Cultures of Control*, edited by Miriam Levin. Amsterdam: Harwood Academic Publishers, 2000.
- Wood, James. *History of International Broadcasting*. London: Peter Peregrinus, 1992.
- . *History of International Broadcasting, Volume 2*. London: IEE, 2000.
- Woodhead, Linda, ed. *Religions in the Modern World: Traditions and Transformations*. London and New York: Routledge, 2002.
- World Radio Missionary Fellowship, *Catch The Vision: The Story of HCJB – The Voice of the Andes*. Opa Locka, FL: World Radio Missionary Fellowship, 1989.
- Yates, JoAnne. *Control through Communication: The Rise of System in American Management*. Baltimore: Johns Hopkins, 1989.
- Yates, Joshua. "American Evangelicals: The Overlooked Globalizers and Their Unintended Gospel of Modernity." *Hedgehog Review* 4 (Summer 2002): 66-90.